



# UNDERSTANDING CUSTOMER VALUE IN A FINNISH SPECIAL ASSIGNMENT COMPANY

A case study on perceptions of customer value

Master's Thesis  
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## **Abstract**

Customer value has been increasing in importance as a driver of business operations for decades. This thesis seeks to explore whether the approach has made its way also to the operations of a Finnish state majority-owned company entrusted with a special assignment.

Whereas companies are most often governed by competitive markets, special assignment companies are governed by the special assignment, defined by the shareholders, i.e. the Finnish state. Therefore, they can be argued to be governed by a hybrid logic comprised partly of competitive markets, networks and state authority. The case study explores how customer value and its role in CSC's operations are perceived by the middle-level management of CSC, a state-majority owned special assignment company serving higher education and research institutions as well as various state agencies.

This thesis illustrates the complexity of the environment in which CSC operates. In addition, by exploring both a public administration and a business administration perspective towards value, the thesis adds to the understanding of the nature of customer value as well as its relationship to public value. The thesis also shows that within this context customer value and public value might at times be conflicting.

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**Keywords** customer value, public value theory, public administration, state-owned company, state-majority owned company, governing logic

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## Tiivistelmä

Asiakasarvon merkitys liiketoiminnan operatiivisen toiminnan kehittämisessä on kasvanut merkittävästi viimeisinä vuosikymmeninä. Tämä pro gradu –tutkielma tutkii, onko tämä lähestymistapa löytänyt tiensä myös suomalaisen valtion enemmistöomisteisen erityistehtävayhtiön toimintaan.

Siinä missä osakeyhtiöitä useimmiten ohjaa kilpailu, Suomen valtion erityistehtävayhtiöitä ohjaa niiden erityistehtävä, jonka valtio omistajana on niille säätänyt. Tästä syystä valtio-omisteisia yhtiöitä voidaan väittää ohjaavan hybridilogiikka, johon vaikuttaa sekä kilpaillut markkinat, verkostot että suora määräysvalta. Tämä tapaustutkimus tutkii kuinka CSC:n, valtion enemmistöomisteisen erityistehtävayhtiön keskijohto mieltää asiakasarvon ja sen roolin yhtiön toiminnassa. CSC palvelee korkeakoulutusta, tutkimuslaitoksia ja lukuisia valtion virastoja.

Tutkielma tuo esille CSC:n monimutkaisen toimintaympäristön. Tämän lisäksi, ottamalla vuorollaan sekä julkishallinnollisen että liiketaloudellisen näkökulman arvoon, tutkielma lisää ymmärrystä asiakasarvon luonteesta sekä sen suhteesta niin kutsuttuun julkiseen arvoon. Tutkielma myös näyttää kuinka tässä yhteydessä asiakasarvo ja julkinen arvo toisinaan saattavat olla keskenään ristiriitaisia.

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**Avainsanat** asiakasarvo, julkisen arvon teoria, julkishallinto, valtio-omisteinen yhtiö, valtion enemmistöomisteinen yhtiö, ohjauslogiikka

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# 1 Introduction

## 1.1 Motivation and background

Customer value has been increasing in prominence as a driver of business operations for companies operating in the competitive markets for three decades. Especially in the Nordics, companies are increasingly expected to pursue other things than shareholder financial value, such as sustainability. Intricacies and dynamics of customer value are understood increasingly better and approaches such as design thinking and service design highlight the importance of customer value. Rigorously focusing customer value enabling has potential to drive competitive advantage. The latest revision of ISO/IEC 20000 IT Service Management standard incorporates value, defined as importance, benefit or usefulness, in its requirements, implying that service providers of all kinds are increasingly expected to deliver services which are of value and to engage in activities which aim at value creation (International Organization for Standardization, 2018).

The public sector has been slow to adopt customer value, but still its potential as a driver of operations has been noted also in the public context. Concepts widely adopted by customer and market oriented companies, such as co-creation and customer oriented approach have also started to find their way to the public context.

Many state-owned enterprises, or state-owned companies, which is the corresponding term in Finland, lie in the intersection of political science and economics, more specifically public administration and public management and economic theory, business economics and marketing theory. Theories of the firm have paid little attention to state-owned enterprises. As noted by Peng, et al. (2016) *"Some scholars have framed the debate as socialism versus capitalism, which has made it politically and ideologically difficult for Western scholars to openly advocate the potential merits of SOEs."* What complicates researching state-owned companies and the likes is that they often differ on several aspects from one country to another, as set forth by the OECD (2018).

Special assignment companies, which operate on a not-for-profit basis are governed by a different logic than companies operating in the competitive markets. They are governed by a hybrid logic, both competitive markets and direct authority as well as networks govern them.

This research is a case study and it seeks to increase understanding on value and customer value in a state majority-owned special assignment company, where competitive



advantage is not sought after and the operations are governed by a set of clearly defined policies. Nevertheless, value and customers are at the focal point of the strategy of the case company. The case company of this research is CSC - IT Center for Science, Ltd., which offers knowledge-intensive IT related services, most often to institutional customers.

According to CSC's mission, CSC's goal is to enable the success of its customers by co-creating value with them. CSC is facing rapid growth, caused primarily by customers seeking synergies and opportunities to collaborate internationally and more effectively. CSC's customers, who most often also are shareholders have varying demands and requests for CSC. Simultaneously, CSC's special assignment and legal environment heavily regulate CSC's operations and affect business development. This puts pressure on CSC's operations. CSC's ways of working, suitable for a small expert organization focusing on a limited number of tasks are no longer sufficient to cope with the growth nor with the expectations of its customers. The case company struggles in defining the customer, since historically, this sort of rhetoric has been unfamiliar and unnecessary for it. There is a need to develop structures to better meet increasing demands and focus internal development efforts to meaningful areas. One modern way of approaching this is by focusing on exploring value from the customer's perspective.

Therefore, this research seeks to increase understanding of the nature of customer value in CSC's context. The perceptions of customer value of CSC's middle-level managers are explored in order to add to the understanding of what constitutes and what affects customer value creation within CSC. Due to the unusual hybridity of the logic which governs CSC, value is examined from different points of view: both public administration and marketing and service theory are explored. Whereas in market oriented companies determining what constitutes value to customers - who ultimately determine the value when engaging with the company's service - and pursuing it might be straightforward and desirable, within the public context what is of value and whether the paying customer should be the one to determine the value is usually a political and more complex question (Miettinen, 2001).

## 1.2 Research questions

The research questions of the present study consist of two primary research questions. The first research question aims at increasing understanding of customer value within CSC:

*"1. How is customer value perceived in CSC?"*

The second research question aims to deepen this understanding on a concrete level and to connect the concept to the service delivery and increase understanding of the factors that hinder and enable customer value creation.

*"2. How does customer value present itself in CSC's service delivery?"*

A literature review will be conducted to guide the design of the empirical part of the study. The case study, setting the empirical context will be conducted to answer the research questions.

### **1.3 Aims of the research**

This research seeks to assist the case company, CSC in developing its operations to better facilitate the creation of value. In addition, the aim is to increase understanding of the potential of customer value to serve as a driver of operations within the public context. The results of the study should add to the discussion of the multifaceted role of value in the public context as well as provide the management of the case company with useful insights.

### **1.4 Research methodology**

The theoretical framework for the research is established through secondary research. Both public administration theory and customer value theory are explored and two candidates for an analytical framework are presented in the literature review. The empirical research consists of semi-structured interviews, which were conducted with middle-level managers of the case company, who are responsible for service delivery and development. The findings of the interviews were then analyzed with the help of the one of the frameworks.

## 2 Theoretical background

This section describes the theoretical background and the key concepts and frameworks of the study. First, the case company is introduced as it gives background to the different parts of the theoretical framework. Secondly, customer value is explored from a marketing perspective as it is from marketing theory where the concept of customer value gained immense interest in the past few decades. Customer value creation is also explored within the context of knowledge-intensive business services in order to focus the theory to a more relevant area for the industry in which CSC operates. Thirdly, a public administration perspective towards value is adopted and finally, the public value theory is introduced.

### 2.1 Case company: CSC - IT Center for Science Ltd.

The case company within which the research problem originated and which sets the empirical context is CSC - IT Center for Science Ltd. (hereafter referred to as CSC). CSC is a Finnish state majority-owned, not-for-profit company entrusted with a special state assignment. CSC's operations started in 1971 and the company was incorporated in 1991. The state's shareholding of CSC is currently 70%, making the state the majority shareholder and CSC an in-house entity of the Finnish state. The remaining 30% was divided in 2016 among Finnish universities and universities of applied sciences (hereafter referred collectively to as HEI, an abbreviation of higher education institutes) (Valtioneuvosto, 2016). In 2018 CSC's revenue was approximately 44M €, with a 10% year-on-year growth and by the end of the year the number of employees was roughly 342 (Kauppalehti, 2020).

CSC develops and offers domain (research, education and culture) specific and generic ICT services to the Ministry of Education and Culture (hereafter referred to as OKM, according to the Finnish abbreviation), HEIs, research institutions, OKM's domain and public administration offices. Domain specificity is a key differentiator between CSC and Valtori, Government ICT Centre, which is the ICT service provider for state administration, established as a bureau in 2014 to streamline ICT service delivery through centralization.

CSC operates the Finnish University and Research Network, Funet, and various kinds of ICT platforms, on which most of the services developed by CSC also operate. CSC develops and maintains applications and complex systems for one or more customers, either organized as consortia or via another organization, such as OKM. In addition, CSC provides professional services. The extent to which CSC's services are visible to an individual citizen varies; mostly they remain hidden.

Knowledge is CSC's most vital asset. An abundance of expertise as well as knowledge regarding the high-tech services which CSC offers has accumulated as tacit and explicit knowledge in CSC's employees. CSC is an important link within a network of state agencies and other organizations which are closely related to OKM's administrative branch. Knowledge regarding this network is highly important to CSC and its customers.

The majority of CSC's customers are organizations operating in the domain of education, research and culture. A significant proportion of CSC's revenue comes directly from OKM, where OKM is the contracting entity - the customer in business economic terms - but another organization, or the end-users which the organization represents benefit from the service. Out of the services offered to OKM, CSC is often responsible for the end-user service delivery, as is the case in scientific computing resources. In other cases, CSC's customers are organizations such as state agencies, where procurement decisions are done by the organizations itself, much like in a normal B2B relationship.

### 2.1.1 State ownership and corporate governance

State ownership is generally considered to grant state-owned and state majority-owned companies a privileged position. Therefore, states and intergovernmental organizations strive to ensure competitive neutrality through legislation, policies and corporate governance (OECD, 2009). In the past few years, increased emphasis has been given to formulating criteria and principles to how state-owned companies should operate and be steered. Companies are expected to follow principles of good governance.

Currently in Finland, the limited liability companies in which the State is a shareholder are often categorized based on the type of interest the state has towards them: financial, strategic and special assignment. Special assignment companies have been issued a specific task which states the area of business they are to focus on and from which they should not stray too far from. Ownership steering of special assignment companies which operate at a not-for-profit basis is appointed directly to a specific ministry (Valtioneuvoston kanslia, 2016). This applies usually in cases in which the core business of the company is closely related to the substance of the policies which the ministry is responsible for implementing (Valtioneuvoston kanslia, 2019). Most companies in which the state has a strategic interest are steered by The Prime Minister's Office.

Value is at the core of CSC's strategy, which reflects the goals set for the company. The guiding principle of CSC's current strategy is enabling customer success, which is pursued by: 1) Co-creating value with customers, 2) Being transparent, agile and

experimenting, 3) Generating interoperability and co-operation, 4) Showing leadership and accountability and 5) Impacting locally and globally (Csc.fi, n.d.). The strategy reflects the mission of the company, including the special assignment. The strategy is set by CSC's management and board of directors. CSC's management engages actively in stakeholder discussions when drafting the strategy, thus the strategy reflects both the will of the owners and the needs of customers.

CSC is one of 33 companies in Finland the existence of which is justified by a special assignment, i.e. which has societal goals or public policy assignments (Valtiontalouden tarkastusvirasto, 2018). CSC's steering ministry is OKM.

The state's strategy regarding special assignments is reflected in the special assignment companies' ownership strategies (Valtiontalouden kehittämissosasto, 2018). According to the State Shareholdings and Ownership Steering Act the key mechanism for ownership steering by the state is using the shareholder's voting right in the meeting of the board of directors. According to the act, OKM is responsible for appointing and instructing the state's representatives to CSC's annual general meeting. The board of directors is jointly responsible with the management of the company for the financial outcome of the company. The state representatives are responsible for ownership steering, whereas business decision making is the responsibility of the operating bodies within the company. (Vuoria, 2004).

Miettinen (2001) notes the risk that the goals of individuals involved in the management and steering of the company might distort the overall attention and goals from those of citizens. A report on state-owned enterprises from 2010 researched state-owned enterprises in the theoretical framework of agency theory and identified cases in which agency issues were present - the guiding ministry or the state being the principal and the state-owned company and its management being the agent. The report recommended increasing control of the state on the state-owned company (Oulasvirta, et al. 2010).

### 2.1.2 Special assignment and principles of operation

In comparison to private companies, the boundaries of the business and the customers of CSC are more strictly determined. The most significant determinant of CSC's operations is the Articles of incorporation, which defines the company's mission, and the Shareholder's agreement, which states the special assignment given by the state. The ownership strategy (CSC, n.d.) defines more specifically what business the owners expects the company to engage in, and the board of directors defines the goals based on the owners' strategy.

According to the company's shareholder agreement (CSC, n.d.) CSC's special assignment is to deliver and develop services for:

1. OKM
2. OKM's administrative branch
3. HEIs and research
4. offering the capability developed in the special assignment endeavors to the use of organizations within OKM's domain and to otherwise develop their operative prerequisites
5. identifying new innovations and service concepts in national and international collaboration and utilizing them to strengthen Finnish research and capabilities
6. other actors, especially when this benefits the special assignment operations or when synergy for the state can be expected to be created as a result and when this does not compromise the fulfillment of its assigned tasks.

The shareholder's agreement also defines how CSC should operate:

1. not based on the markets
2. with a customer oriented approach
3. as a pioneer in its special assignments
4. in broad, enabling cooperation
5. controlling financial business risk well
6. according to principles of sustainable development.

In addition, CSC should operate at a not-for-profit principle. It is allowed to add into its prices a controlled margin, which is agreed with the owners to facilitate the development of new services. The owners also expect the company to engage in transparency in e.g. documentation, pricing and by sharing its assets (e.g. certain data).

The first criteria, that CSC should not operate based on the markets is especially important in CSC's daily operations: the company is not supposed to operate in the competitive markets nor create disruptions in the market. Because of this policy, CSC does not take part in competitive tendering for public procurement. CSC offers services which commercial service providers would not be able or willing to provide, due to the lack of market potential. Still, the company often collaborates with regular companies, subcontracting and outsourcing parts of service delivery to commercial partners which provides an opportunity for commercial service providers to also promote their other services to the public sector.

### 2.1.3 A changing legislative environment

CSC's operations are significantly impacted by EU directives and changes in national legislation either directly or indirectly through its customers. CSC's business is regulated by the Limited liability companies Act (Act 624/2006) and Competition Act (Act 948/2011) as any other non-listed limited liability company, and also by State shareholdings and ownership steering Act (Act 1368/2007) and the Act on public procurement and concession contracts (Act 1397/2016).

The Act on public procurement and concession contracts (Act 1397/2016) determines the rules and requirements for public procurement. It has two key implications in CSC's case. First, as a contracting entity as defined in the Act, CSC has to comply with the public procurement legislation in its own procurement efforts. In this, CSC often utilizes the services of Hansel Ltd., the central purchasing body of Finland. Secondly, as an in-house entity as defined in the Act, CSC can only offer its services to organizations outside the state's administrative branch to a very limited extent. In other words, the vast majority of CSC's revenue comes from state-affiliated organizations. The Act allows direct procurement, without applying the competitive tendering process from in-house entities, i.e. when the customer is the State or its administrative agencies. Nor does the Act apply in cases of a natural monopoly, which indeed CSC has with some of its services.

The Act on public procurement and concession contracts (Act 1397/2016) came into force in the beginning of 2019, substituting an earlier act. The Act further reduced the extent to which CSC is able to provide services to organizations which are not its shareholders nor in-house entities to 500 000 € annually, from an earlier limitation of roughly 10% of annual revenue. The EU directive which the Act is based on seeks to ensure competitive neutrality, a goal which is also reflected in the principles according to which CSC is supposed to operate. However, in Finland the limit is stricter than what the directive sets: the directive's limit is at 20% of annual revenue. This prevents CSC from benefiting from economies of scale in areas where this could be achieved. Research and education is advanced by countless international and national operators, yet CSC's ability to engage with these operators is heavily limited. This sometimes complicates also how CSC can serve its existing customers.

As a consequence of the renewed legislation on public procurement, in 2018 a law specifically on CSC was proposed to clarify CSC's position to strengthen its service delivery to public organizations outside the state. For some state-owned companies a separate Act has been set to strengthen and normalize their status (Valtioneuvoston kanslia, 2016).

In 2010 Finnish universities were given independence from the state administration under the Universities Act (558/2009) to improve their autonomy. This changed their legislative relation to CSC, as they were no longer entitled to in-house procurement from CSC, forcing them to do procurement according to the procurement legislation. To restore the in-house position, in 2016 the state sub-divided 30% of CSC's shares to both types of HEIs to re-enable smooth service delivery between CSC and universities and to simultaneously enable an equal status of both types of HEIs by CSC (Valtioneuvosto, 2016).

## **2.2 Customer value in knowledge-intensive business services**

Next, a commercial perspective to value is adopted. This section describes briefly what marketing theory states about customer value, which is a heavily researched topic in the field. Central to CSC's strategy is value co-creation with customers. Yet, whether value and value co-creation or even customers are understood uniformly throughout the company is unclear. The first research question demands a baseline understanding of what customer value is. Although there are several differences between CSC and companies operating in the competitive markets, this perspective should be beneficial in order to better understand what modern marketing theory states about customer value in the competitive markets and what its implications to a state-owned company such as CSC might be.

Comparison should offer a healthy benchmark between public and private sector but also assist in identifying where the private and the public continue to differ or whether there are similarities between the two. Although, as the special assignment states, CSC does not operate based on the markets, many of CSC's customers are accustomed to operating with companies operating in the competitive markets, which might also have an impact on their expectations towards how well CSC takes their perspective into account and incorporates it into service delivery. When dealing with those customers, CSC should be able to articulate how it differs from them and what is the value customers can expect because of this arrangement. Due to these reasons, the empirical part of the study was conducted by adopting primarily a commercial perspective to value.

### **2.2.1 The origins of customer value**

Since 1990s, a shift in the focus of both academia and practice from performance improvement efforts such as total quality management and embedding value into products during the manufacturing process (Porter, 1985) towards a more customer oriented approach has taken place. Balanced scorecard, introduced by Kaplan and Norton (1992) highlight the



perspective of the customer by defining it as an objective together with the financial performance, internal operations and learning perspectives of a firm. Customer value is usually connected with customer satisfaction and loyalty, cost-efficiency and quality, and serves as a driver for differentiation, enabling achieving competitive advantage (Mitronen and Rintamäki, 2012; Porter, 1985).

Customer-perceived value is often described as the customer's perception of the tradeoff between the benefits they receive and sacrifices they make when engaging with an offering (Zeithaml, 1988). According to Yrjölä et al. (2019) customer value refers to what customers perceive as meaningful and important. According to Woodruff (1997) a classic mismatch exists between what managers think customers value and what customers say they value, not to mention that the customer's value perceptions change over time (Zeithaml, 1988). In this study, the definition by Woodruff (1997) is used as a starting point:

*"Customer value is a customer's perceived preference for, and evaluation of, those product attributes, attribute performances, and consequences that arise from use and that facilitate, or block, the customers in achieving their goals and purposes in use". (p.142)*

Slater (1997) compared customer value as a theory to such classical theorems of the firm such as transaction costs and resource-based theory. According to Slater, any firm exists in order to fulfill such needs of its customers which the customer is not able to fulfill themselves. Customer value is seen as a source of competitive advantage, but requires re-evaluating internal processes for customer value delivery and learning (Woodruff, 1997). A market oriented firm would optimize its key processes, such as new product development, order fulfillment and market sensing to better incorporate the views of the customer and thus maximize customer value, whereas according to transaction costs economics the decision to purchase a service is based on the minimization of costs associated with doing so (Slater, 1997).

### 2.2.2 Value co-creation and service-dominant logic

The concept of value co-creation originates from marketing research, from where its use has been expanded from the original to refer also to tight collaboration in service design.

In their highly influential research paper "Evolving to a new dominant logic" Vargo and Lusch (2004) continued on the same track as Woodruff (1997) and Slater (1997). They cited several of their peers calling for a shift in focus within marketing research to truly

understand service business and research, which had for decades focused on internal production capabilities (Woodruff, 1997), the IHIP properties of services (intangibility, heterogeneity, inseparability, perishability) and treated services as a residual which are potentially required for enhancing the value of tangible products. Vargo and Lusch (2004) synthesised research under the concept of service-dominant logic, which since has been embraced by modern marketing research.

Service-dominant logic highlights the active role of the customer in the process of value creation (Saarijärvi et. al, 2013). In service-dominant logic, value is always co-created by multiple actors, including the beneficiary (Prahalad and Ramaswamy, 2004; Vargo and Lusch, 2015). The producer cannot embed value into the final service during the production process or other internal processes and expect the value to be transmitted to the customer, as the traditional value chain thinking implies. Instead, they merely create value propositions and facilitate and support the value creating process of the customer, or the beneficiary as usually referred to within service-dominant logic. This perspective is important, since service requires (at least) two counterparts, forcing the provider to always consider the perspective of the customer and the ways in which the customer engages with the service as well. Value creation takes place only when the beneficiary actually engages with the service offering and it is only the beneficiary who determines "[...] uniquely and phenomenologically [...]" (Vargo and Lusch, 2015) whether value is truly created (Zeithaml, 1988) during that process. This is referred to as value co-creation and the value which is created through this process is referred to as value-in-use (Vargo and Lusch, 2015). Value is thus dependent on the context and the actor, and the service provider's role is more complex than simply distributor of predefined value, which has been the dominant way of thinking for decades. Value-in-exchange (i.e. price) and cash flow are noted as important feedback and learning mechanisms for the service provider, whether they are for-profit or non-profit operators (Vargo and Lusch, 2006).

Vargo and Lusch (2004) define service as *"[...] the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself."* and define goods as service distribution mechanisms and thus a sub-category of service. They present the concepts of operand and operant resources. They highlight that service is the only type of production: even when manufacturing goods, businesses are essentially using their operant, mostly intangible, resources such as knowledge, core competences and organizational processes, on operand, mostly tangible resources such as raw materials, so that the outcome will be of use to those

using the it. According to Vargo and Lusch (2004) all social and economic actors, including the customer, are resource integrators and together these resources are the producers of effect. Businesses engage in resource integration on behalf of the customer, who would otherwise need to find other means of fulfilling their needs, i.e. they are essentially servicing the customer.

Service-dominant logic comes close to the traditional resource-based theory of the firm, which states that all firms are different based on the resource bundles which reside in them. Traditionally, the resources are divided into human, physical and organizational capital resources. According to the resource-based theory, resources only become valuable when they are used to exploit opportunities or minimize threats and when they are rare, imperfectly imitable and non-substitutable (Barney, 1991).

Lastly, central to service-dominant logic is the notion that institutional arrangements coordinate value co-creation. Institutions include rules, norms, meanings, symbols, practices and other aides to collaboration and are vital as repetitive and durable practices of value creation - referred to as institutionalized solutions by Vargo and Lusch (2015). Traditionally, the concept reflecting this definition would be "services" as a noun, yet in general, the heart of service dominant logic is service as a verb. Thus, institutionalized solutions mean a shared understanding of what and how is being done.

Service research has embraced service-dominant logic and especially value co-creation. Some researchers have criticized the research stream for being too abstract with little substance, while some (e.g. Heinonen et al. 2010) argue that even service-dominant logic focuses too much on the service provider and suggest adopting a customer logic. Perhaps because of the proliferation of academic research papers and frameworks (e.g. Sarker et al 2012; Yrjölä et al 2019), with the domain and actors of research varying greatly, business practitioners have been left wondering what the practical relevance and potential for enhancing business performance of service dominant logic is (Saarijärvi, et al 2013). Yet, Mitronen and Rintamäki (2012) argue that service-dominant logic fits the public sector well, where individuals, business customers, state organizations are seen as resources for each other and collaboration between the parties increases the overall good.

### 2.2.3 Value in knowledge-intensive business services (KIBS) context

Value is a fundamental concept for understanding purchasing in B2B markets (Eggert et al. 2018). Given that CSC provides services primarily to institutional customers, exploring the essence of value from a B2B perspective should be useful for CSC.

Technological complexity, specialization driven by increasing customization (Kleinaltenkamp, 2015) and knowledge intensiveness is making it increasingly difficult for companies to acquire all the required resources to fulfill their own needs, forcing them to rely on interaction, collaboration and partnerships (Aarikka-Stenroos and Jaakkola, 2012). Resources, such as capital, material and service inputs in the B2B context are acquired for the organization's own use or to be incorporated into the organization's product or service delivery process (Anderson and Narus, 2004; Kleinaltenkamp, 2015). In the long term, B2B relationships can evolve into long-term partnerships, in which strategic thinking is enabled. This implies a good knowledge of each other's businesses, enhanced understanding of value-in-use and improved planning of future businesses (Keränen, 2015).

A further defining characteristic of CSC which needs to be considered is that CSC operates in a technologically advanced sector, bringing its own twist to the service delivery. Failing to consider the process in the correct context and the nature of CSC's business might hide significant factors when assessing the value which CSC provides. CSC can be characterized as a knowledge-intensive business service (KIBS for short) company. Knowledge-intensive business service providers are characterized, by definition, by applying, either directly or indirectly, expert knowledge to the benefit of organizational business customers. Miles et al. (1995) distinguishes between traditional professional services (P-KIBS) and new-technology-based services (T-KIBS). Examples of KIBS include IT services, technical consultancy, legal services and marketing communications services (Aarikka-Stenroos and Jaakkola, 2012). CSC's business has always included high-tech services, yet professional services are a newer edition to CSC's portfolio.

T-KIBS companies leverage advanced technical resources, the development of which has required expertise, in their service delivery. Due to the complexity of IT services delivery, IT-best practices (e.g. ITIL, information technology infrastructure library) and service management standards ISO/IEC 20000 have become important tools for managing IT enabled services and for easing the evaluation of quality by shifting the responsibility to the provider. CSC certainly possesses characteristics of T-KIBS company, as high-tech is at the heart of CSC's service delivery. CSC's core business is high-tech services, such as high-performance computing and data communication networks and thus this is where its core competence is. Nowadays CSC's technical service portfolio is vast and constantly under development to cater to evolving customer needs. CSC's technical solutions vary in the degree to which designs can be reused: in the case of certain portfolio elements such as computational capacity services, CSC's service offering is relatively stable and standardized.

Perhaps the most crucial resource in KIBS companies, especially P-KIBS companies are its employees: professionals bring their expertise, experience, professional reputation and network of professional contacts along and to some extent, this also applies to CSC. Learning and future strategic capabilities in KIBS are often invested in through the selection of projects and customers. During the sales process, considerations such as resource availability, project contribution to efficient resource leveraging and accumulation should be catered to. (Løwendahl, 2005). Professional service firms differ on many dimensions, including the predictability of projects (whether they appear at an ad hoc basis or repetitively) and the extent to which previous solutions can be applied. Oftentimes, the poorer the problem specification, the higher the level of innovation required and the more uncertainty involved. (Løwendahl 2005).

CSC often deals with unusual, complex, even innovative cases, such as when new legislation imposes requirements on ministries or when research institutions develop their service delivery. Due to the proximity to the state, CSC is often summoned when new initiatives are being planned.

The direction of growth along the established strategic focus of professional service firms is not easy to maintain due to the ad hoc nature of projects, the power possessed by individual more seasoned professionals and their varying personal interests and ambitions. As most projects of professional service firms are often unique in nature, role of senior professionals and the accumulated capabilities they possess is crucial. (Løwendahl 2005). The same applies to some extent for CSC. Public sector institutions are in an authoritative position in relation to CSC; yet sometimes decisions on whether to pursue a new business opportunity is in the hands of relatively few individuals. CSC's strategy guides the operations, yet due to the constantly evolving technological landscape, new opportunities are not easy to foresee and incorporate into strategy.

### **2.2.3.1 Value layers in B2B**

The first research question deals with understanding the value which CSC offers. This section explores the types and layered nature of value in commercial B2B markets as presented by marketing theory.

Aarikka-Stenroos and Jaakkola (2012) categorize value-in-use for a business to 1) direct monetary benefits, 2) indirect monetary benefits relating to the solution and 3) non-monetary benefits, such as relief and image improvements. Customers often also benefit from the process itself: their understanding of their own needs as well as the potential

solutions improves. Rintamäki and Mitronen (2014) discuss value through layers: functional value and economic value establishing the lowest, least subjective level, followed by emotional value and lastly symbolic value. With a similar idea, Almquist et al.'s (2018) B2B value framework is based on Maslow's Hierarchy of needs (Maslow, 1943). It identifies similar types of value as Aarikka-Stenroos and Jaakkola (2012) but at a greater level of detail and without distinguishing between expected value and experienced value. The framework by Almquist et al (2018) identifies 40 types of value which might be the outcome or benefit of service instances. The framework consists of five levels, which vary in degree of subjectivity. The most objective level is the so called table stakes level (bottom row in the Table 1). The levels which follow are functional, so called ease of doing business, individual and inspirational value.

Table 1: Value hierarchy in B2B by Almquist et al (2018)

Inspirational					
<b>Purpose</b>	Vision	Hope	Social responsibility		
Individual					
<b>Career</b>	Network expansion	Marketability	Reputational assurance		
<b>Personal</b>	Design & aesthetics	Growth & development	Reduced anxiety	Fun & perks	
Ease of doing business					
<b>Productivity</b>	Time savings	Reduced effort	Decreased hassles	Information	Transparency
<b>Access</b>	Availability	Variety	Configurability		
<b>Relationship</b>	Responsiveness	Expertise	Commitment	Stability	Cultural fit
<b>Operational</b>	Organization	Simplification	Connection	Integration	
<b>Strategic</b>	Risk reduction	Reach	Flexibility	Component quality	
Functional					
<b>Economic</b>	Improved top line	Cost reduction			
<b>Performance</b>	Product quality	Scalability	Innovation		
Table stakes					
	Meeting specifications	Acceptable price	Regulatory compliance	Ethical standards	

### **2.2.3.2 Organizational buying**

The process of organizational buying has been researched much more than the value created through it. At its basic form, a purchasing transaction involves a service offer, distribution system, communication system, a price (i.e. value-in-exchange) and a contract, which explains the rights and obligations of each party regarding performance of the service (Kleinaltenkamp, 2015). Oftentimes, the process is significantly more complex, with rigid systems of evaluation in place.

Also public procurement procedures can be very extensive and complex. Both CSC and its customers are regulated by the Act on public procurement and concession contracts. The objectives to be pursued by public procurement include good planning, efficiency and high quality (Valtionvarainministeriö, n.d.).

Yet, as Aarikka-Stenroos and Jaakkola's work (2012) and Almquist et al.'s framework's (2018) upper and more subjective levels show, purchasing as a rational process which aims at reaching an optimal outcome from a collective and objective perspective has been disregarded long ago. Behavioristic and social aspects of organizational buying have been researched for decades. A focus on bounded rationality (Simon, 1955) has increased awareness of the role of heuristics in decision making as opposed to rational, mathematical decision making. Recent models, such as the industrial buying behavior model and integrated model of buying behavior emphasize the dyadic interaction between the buyer and the seller to reach a decision, which is above all a social result (Kleinaltenkamp, 2015). The buying process might be perceived as involving only a small, compact buying center with a set of criteria, whereas modern models suggest that purchasing involves a network of people - sometimes a complex one - roles and communication, where influence and power is exerted both intra- and inter-organization (Fließ et al. 2015).

### **2.2.3.3 The process of value creation in KIBS**

Whereas organizational buying considers the buyer's perspective, the second research question explores the matter from the provider's, that is, CSC's perspective. The research question asks how customer value presents itself in CSC's service delivery process. Therefore, next, the process of value creation in a KIBS context is explored in order to uncover how customer value can be incorporated in an organization's value delivery process. A provider seeking to improve its competitive advantage, in order to be able to succeed in serving other businesses, needs to develop a profound understanding of the customer's value creating process (Grönroos, 2008), often requiring established and organized knowledge

management practices and actively looking for co-creation opportunities (Payne et al 2007). This forces the service provider to shift the orientation of its strategy from inside-out to outside-in (Payne et al 2007; Yrjölä et al 2019). A service provider should influence a customer's value creating processes by actively engaging with it; not the other way around, that customers engage with the provider's value creating process (Grönroos, 2008).

According to marketing theory, customers do not in general care about the underlying products and appliances which the service provider decides to utilize in its service provision process, as long as they succeed in enabling the processes and procedures which were expected (Grönroos, 2008; Tuli, et al 2010). Yet, according to Løwendahl (2005) professional service cannot be delivered without a close cooperation with the customer.

According to Løwendahl (2005) value in professional service firms is established in three stages: first by managing to sell a proposition, secondly delivering on what has been agreed upon and thirdly learning from the two for efficiency and effectiveness improvements in future projects. In some cases, the stages might equal diagnosing and solving a problem. In any case, sales happen before design and delivery phases, creating a fundamental difference to manufacturing companies. (Løwendahl 2005).

Much less straightforward, Aarikka-Stenroos and Jaakkola (2012) see value creation in the knowledge intensive business service provisioning as a dyadic, non-linear problem solving process which consists of five key activities, from both the perspectives of the provider and the customer: 1) diagnosing the needs, 2) designing and producing the solution, 3) organizing the process and resources, 4) managing value conflicts and 5) implementing the solution. Although the activities are listed in a consecutive manner, the activities are not completely linear. Both the customer and the provider take on multiple roles at different stages of the activities and both incorporate various resources to the process, such as information, knowledge, skills and facilities (Aarikka-Stenroos and Jaakkola, 2012; Kohli & Grover, 2012).

According to Aarikka-Stenroos and Jaakkola (2012) value creation is recursive in nature and requires an interconnected set of processes and entails learning on both the provider and the customer side. Figure 1 illustrates Aarikka-Stenroos and Jaakkola's (2012) framework.



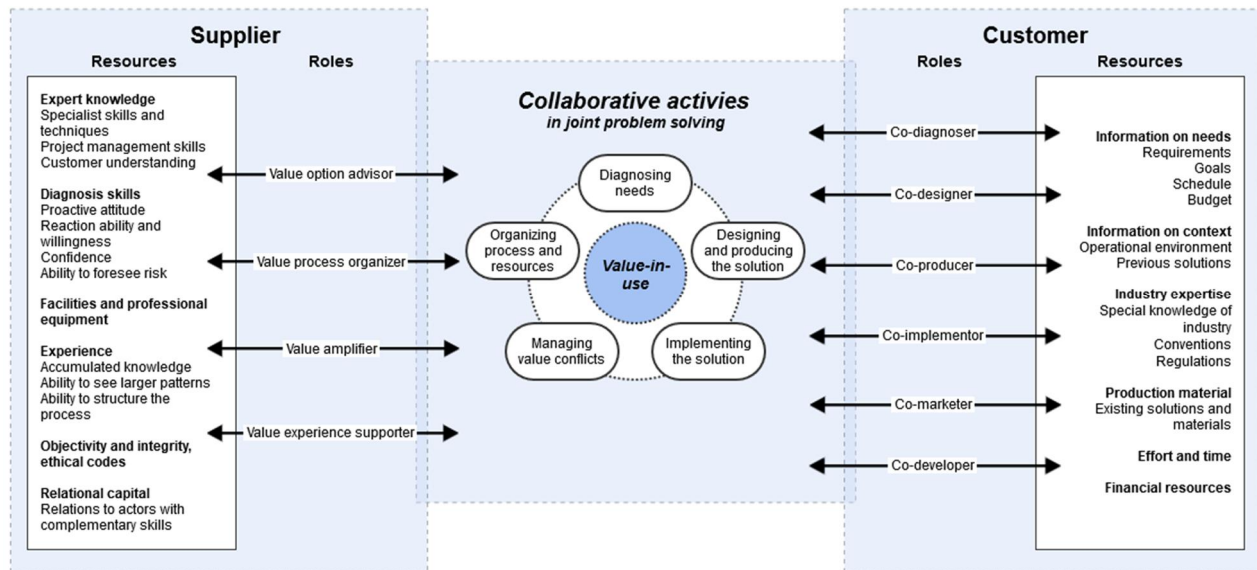


Figure 1: Joint problem solving as value co-creation in knowledge intensive services by Aarikka-Stenroos and Jaakkola (2012)

In the case of knowledge-intensive business services, the value proposition is often highly influenced or even jointly defined with the customer (Aarikka-Stenroos and Jaakkola 2012; Payne, et al. 2017). Similarly, according to Tuli, et al (2010) customers seeking solutions often expect the provider to proactively contribute to the iterative uncovering of customer's business needs, of which even the customer might have an incomplete understanding of. Customers are often not fully aware of all their business needs and need the provider to ask multiple stakeholders the correct questions in order to define the problem correctly. This requires plenty of social capital, a future orientation and a broad understanding of the customer's business on the provider's side. (Tuli et al 2010). Also Keränen (2015) suggests a proactive approach and knowledge sharing as important for efficient collaboration in designing solutions, as well as listening, learning, developing and testing together.

According to Keränen (2015), preconditions for stakeholder interaction for enhanced value co-creation include two-way communication, long-term relationship orientation, trust, knowing in person, transparency and ubiquitous interaction. A profound understanding of the encounters between provider and customer is a part of organizational learning, which is vital for understanding the customer's needs (Payne et al 2007; Grover and Kohli, 2012). Failing to understand the relational nature of the process of providing solutions and instead treating them as individual transactions results in lost sales opportunities, dissatisfied customers and lower profitability (Tuli, et al 2010).

Solution effectiveness also depends on customer adaptiveness, as it creates potential for evaluating and pushing the boundaries of the alternatives the provider can deliver. This requires trust towards the vendor. (Tuli et al, 2007). Also Komulainen (2014) highlights the importance of understanding the customer's orientation towards learning and their absorptive capacity. The customer's perceived value can vary greatly depending on how well they can absorb a new technology and whether they want to engage in learning. A good understanding of this will assist in creating value propositions which encourage the customer to sacrifice the necessary resources and thus facilitate value co-creation (Komulainen, 2014).

In addition to describing the benefits, or types of value-in-use Aarikka-Stenroos and Jaakkola (2012) also describe customer sacrifices, following the definition by Zeithaml (1997). According to them, the sacrifices relating to the process, especially in the solution definition phase include costs, time and effort invested in diagnosing the need, tolerating conflicts between parties and perceived risks stemming from uncertainty of the solution and its usefulness. Tuli et al (2007) specify, that the customers also need to help the provider by providing political counseling regarding their own organization in addition to operational counseling.

Issues that might easily affect the process include information asymmetry which is common in knowledge-intensive business services, obscurity of the value options and the problem solving process, as well as the indefinite nature of the available resources between the parties (Aarikka-Stenroos and Jaakkola, 2012). Solving problems often requires heuristic problem solving, trial and error and individual judgement, complicating the development of a clear value proposition further (Nordin and Kowalkowski, 2010).

Cyertin and March (1963), cited by Harisalo (2013b, p.43) identified the existence of coalitions within organizations aspiring for different goals, conflicting the view of the firm as a collection of rational actors working towards a common goal. Thus, value conflicts might not only arise between the customer and the service provider. Characteristic to professionals in knowledge-intensive business services is that they often have strong opinions against management and on what they want to do and what is appropriate for the customers. They are also often in possession of better knowledge than the managers, reversing the power structure.

A well-known problem in professional service companies and companies engaging in the business of "solutions" is maintaining efficiency in service delivery. Achieving economies of scale in professional service firms is difficult and little evidence seems to support its existence: problems are unique and establishing standard procedures that

facilitate problem solving is difficult. With growth, complex and costly coordination mechanisms increase in size and utilization, requiring development of techniques and technology to increase efficient value creation (Løwendahl 2005). Tuli et al (2007) specifies that efficient solution provision requires a flexible hierarchy allowing the right people to be in charge when their contribution is in the spotlight, emphasis on documentation in order to enable the entire team to know the state of play, incentives designed to take into account the complete efficiency of the solution and fixed inter-actors with the customers, allowing the provider's actors to gain social capital with the customer. Lastly, the internal processes, roles and responsibilities should be articulated clearly to the units involved in solution production to enable efficient coordination of tasks, without inhibiting flexibility (Tuli, et al. 2007).

## 2.3 Value within the public context

This section of the theoretical framework focuses on the public administration dimension of the research problem, as the state ownership and its implications for value creation need to be uncovered to provide a more accurate depiction of value within CSC. According to Mitronen and Rintamäki (2012) the public sector has been slow to adopt customer value as a driver of operations, although international reforms in the past few decades have shifted focus towards a more customer-oriented approach. (Aberbach and Christensen, 2005, cited in Tervi, 2019, p. 17).

### 2.3.1 Governing logic

Operations of public and private organizations are governed by power, authority, rules, norms, values, trust and culture, and the combination of these characteristics, i.e. the governance system of the firm reflects who decides the target customer value, what the quantity, quality, price and pricing criteria and the service levels are (Mitronen and Rintamäki 2012). Although CSC bears characteristics with companies operating in the competitive markets it is, as the case description illustrated, governed by another, fundamentally different logic: its goal is to serve its shareholders, the state and the higher education institutions, which operate in an authorizing role in relation to CSC.

In public organizations hierarchy is traditionally the de facto governance system; an elected authority is usually appointed to oversee the organization and the completion of its assigned tasks. At the other end of the spectrum is the governing force of competitive markets, in which market economics determine what an organization is to pursue. In reality, most governance systems are some sort of hybrids (Mitronen and Rintamäki, 2012). The

challenge then becomes defining the value proposition, budget and resource usage in a network of several, different kinds of operators striving for different kinds of goals and ambitions and synchronizing the processes and logics in order to reach a shared understanding of each other's roles.

In the public sector, oftentimes a broader network of operators exists, where tasks are divided by legislation and markets do not judge who is to create value (Powell, 1990). Thus, it becomes important to identify and state common value propositions, customer expectations and values, contents of the service and the core processes of the service, as well as common interests, rules of development and conflict resolution protocols. (Mitronen and Rintamäki 2012).

### 2.3.2 An evolving take on performance evaluation in SOEs

Defining and comparing the value of state owned companies has been difficult and a matter of perspective, and SOEs ability to produce other than economic value might be affected by changing government programs (Miettinen 2001).

Nowadays, in managing special assignment companies the state aspires towards an optimized financial and societal total outcome (Valtioneuvoston kanslia, 2007). The total outcome consists of profit, asset valuation increase, sustainability of the business and the successful and efficient management of the assigned tasks. In Finland, state-owned companies should be evaluated against the goals assigned to them. If the goals are met and all business lines are able to cover their own costs, state-ownership is justified. Unprofitable areas of business should not be subvented by others. This is in order to ensure that the business is economically sustainable and that the cost structure remains transparent (Valtiontalouden tarkastusvirasto, 2018).

The perception of public institutions as bureaucratic and inefficient has been around for a long time: to dispose of the practices and culture which has been the reason for the development of such perceptions takes time. The perception resulted in 1980's in the development of a philosophy, called New public management (NPM), which suggested that public bureaucracies should be run like businesses, adhering to the same principles of market economics as traditional businesses. Also, economic value might be relatively easy to evaluate compared to more abstract metrics such as impact. In Sweden, Alexius and Cisneros Örnberg (2015) studied factors contributing towards and against value pluralism - having several driving values as objectives - of state owned companies with public policy assignments, and the evaluation of their performance by Swedish government officials. They

found, that financial values were prioritized over non-financial ones and non-financial values were translated to economic language. The study on the performance evaluation was done in during a reform in the governance arrangements of Swedish SOEs.

Indeed, according to Peng, et al. (2016) performance of SOEs is one of the most researched topics of SOEs. They highlight the versatile nature of state-owned enterprises, noting that government ownership does not automatically equal government control nor inferior performance than private firms. They also highlight the need for research which seeks to uncover the circumstances and economic criteria under which state owned enterprises perform better or worse. In Finland there has been little difference in economic performance between state-owned companies and other companies (Valtioneuvoston kanslia, 2019).

This post-bureaucratic view, NPM, despite its wide adoption, was not without issues. NPM's sole focus on financial performance removed focus from other aspects of importance. As Cordella and Bonina (2012) put it: "*Traditional bureaucratic organizations add values of objectivity, equality, and impartiality in public service delivery.*" (p.514). These issues evoked calls for a post-bureaucratic and post-competitive view (O'Flynn, 2007). One has been JUG, short for joined-up government, which sought to reintegrate the government and public administration, which had been heavily decentralized and focused on single-purpose organizations. Still, even JUG did not question the underlying focus on efficiency and performance, private sector evaluation metrics, which were at the heart of NPM (Cordella and Bonina, 2012).

Another reaction has been New public service (NPS) (Denhardt and Denhardt, 2000), which outlines a stream of research evoked by the NPM philosophy. NPS suggests that the public administration should serve, not manage, citizens through a network of collaborating organizations, and engage in dialogue with citizens in order to develop an understanding of the common good and shared values instead of focusing on the efficient, customer friendly service provision of individual customers, thus satisfying customers and enabling private customer value. For a thorough discussion on the development trends within public administration, see Bryson, et al. (2014) and O'Flynn (2007).

Defining the customer is more difficult, as the users of the service are oftentimes not paying for the service directly. Even if they were, in terms of equality it would not be considered justifiable to only serve those who are actively willing and able to pay. Second, customers of public service might not even want to be customers of the public service, as can be presumed in the case of speeding tickets (Denhardt and Denhardt, 2000; Osborne,

2018). In economics, these types of goods are often referred to as public goods (Samuelson, 1954). Much of the discussion on value within the public sector focuses on individual citizens and so called private goods, which, in contrast to public goods, can be consumed by an individual at a certain point in time. When it comes to private goods, customer centricity and customer oriented approaches have been researched and used especially in the context of social and healthcare services (e.g. Virtanen et al., 2011).

Despite these complexities, assessing or at least articulating value is necessary, to contribute to the legitimacy of public administration and to ensure focus is not too much on efficiency and cost (Denhardt and Denhardt, 2000). According to Osborne (2017), value should be assessed as the key metric and serve as the key purpose in service delivery instead of performance and efficiency. The perceptions and beliefs on the nature of operations and core purpose possessed by top decision makers in the public sector have a crucial impact on the leadership and development of services (Mitronen and Rintamäki, 2012). Key considerations include how well value is understood and acted upon and how efficiently service can be provided.

### 2.3.3 Public value theory

Moore (1995) offered a new perspective to value according to the traditional division between public and private goods. Similarly, as individuals experience private goods but public goods are consumed constantly and by everyone, value could also be articulated as private or public. In this section, the public value theory (Moore, 1995) will be examined to continue exploring the research on value within the public context. Simultaneously, it will be used to draw together the theoretical aspects explored earlier.

The public value theory encompasses similar topics which have already been explored from a B2B perspective - the nature of value that is pursued and the process of creating value - although perhaps on a more abstract level. Public value theory also adds the dimension which is lacking for companies operating in the competitive markets: the governing logic of authorization, often having its root cause in political decisions and obligation, which is characteristic to the public domain. Therefore, the public value theory is relevant for the first and the second research questions of the research, as it sheds light on CSC's context by bringing forth the factors which differentiate CSC from a regular company.

Moore's initial aim, when developing his theory in 1995 was to assist public sector managers in making sense of the strategic challenges and complex choices they faced. He wanted to encourage strategic thinking and entrepreneurial action in tackling complex

problems (Benington and Moore, 2011). Moore's work has been highly influential, even seminal, as referred to by Williams and Shearer (2011).

Smith (2004) articulates the potential of the approach in the following way:

*"A focus on public value enables one to bring together debates about values, institutions, systems, processes and people. It also enables one to link insights from different analytical perspectives, including public policy, policy analysis, management, economics, political science and governance."* (p. 68-69).

Although there is not one generally accepted definition of public value, some relevant aspects of public value have been defined. First, defining public value is essentially a matter of perspective and requires political discussion. In addition, the defining factor is not who produces it, rather who consumes it, which, according to Moore (1995) is usually a collective process by the citizenry. Also, public value is not only valuable when individuals experience the benefits, but also when the benefits stretch beyond their own self-interest, such as in care for the weak and vulnerable. (Moore, 2013).

The key message in Moore's work was the introduction of strategic management into public management; according to him, strategy had been lacking from the central concepts brought from private sector management with NPM. He deemed it crucial for public sector organizations to identify a value creating strategy focused on the external environment. Moore (2013) articulates the consequences of applying and operationalizing the public value theory in the following way:

*"...public managers had to learn to think in terms of positioning their organizations in complex, dynamic environments, just as private sector managers did. Just as CEOs and business managers have to learn to respond to heterogeneous and dynamic market environments with flexibility, creativity, and innovation, so public managers would have to learn to respond to diverse and volatile political and social environments with equally restless, value-seeking imaginations."* (p. 8, emphasis in original).

Central to Moore's work was an analytical framework, which he called the strategic triangle. The visualization of the framework is presented in Figure 2.

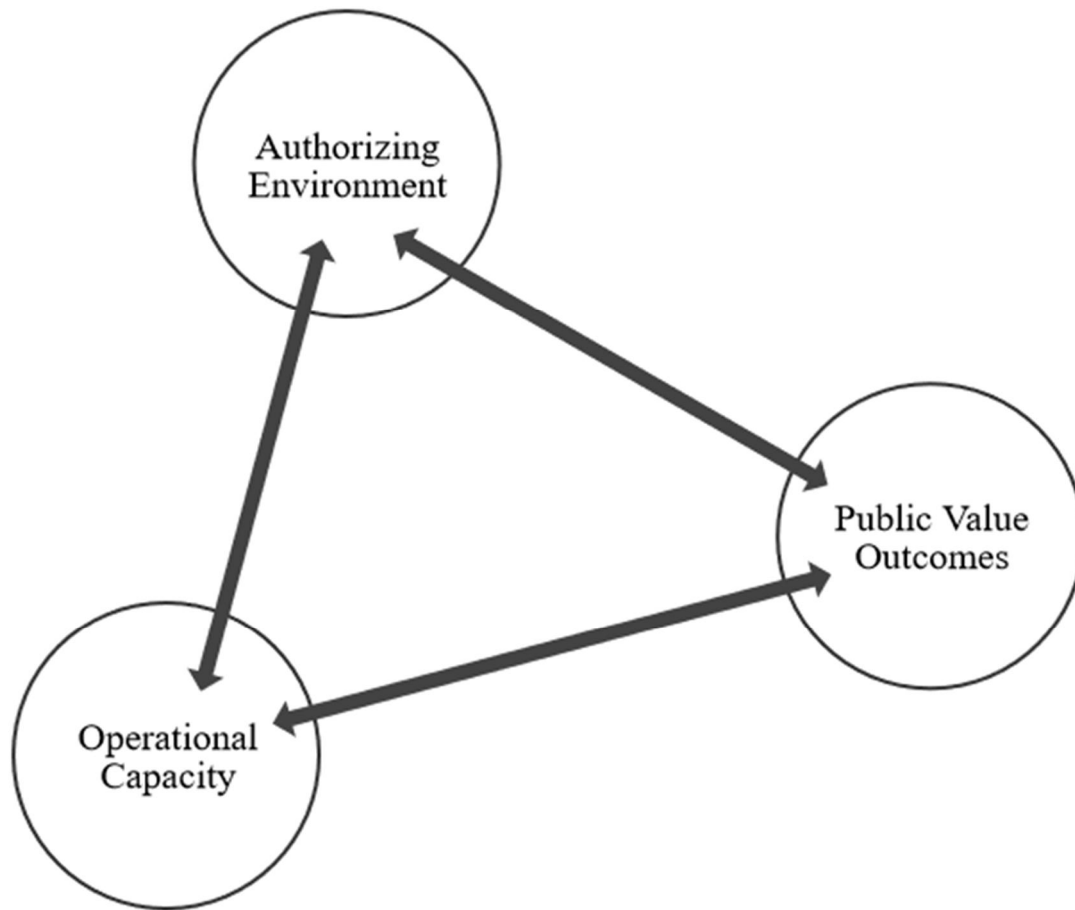


Figure 2: The strategic triangle of public value by Moore (1995)

The strategic triangle consists of three parts: the authorizing environment, operational capacity and public value outcomes. The definition and creation of public value depends on the political authorizing environment as well as on operational capacity that enables value to be created. The public value goal which is sought after needs to be stated and commonly agreed upon beforehand.

Primarily, the triangle is to be used at specific instances, as initiatives to create public value must satisfy three tests based on the triangle. As summarized by Smith (2004) "*Value, legitimacy and feasibility need to be argued.*".

First, policy and management strategy should aim at producing things of value to beneficiaries and overseers. Therefore, the public value outcomes and the strategic goals, also labelled value mission goals, are to be clarified and specified in a convincing manner according to the objectives. Value mission leadership enables a form of collaboration between different organizations, which share a value mission. Second, policy and management strategy should be legitimate and politically sustainable. The authorizing



environment is to be built and sustained: a coalition of partners and agencies from public, private and third sector whose support is required for legitimacy reasons to pursue the necessary strategic action needs to be built and sustained. This might mean more than a formal top-down mandate and might indeed involve conflicts: "*The authorizing environment is therefore conceptualized as a place of contestation where many different views and values struggle for acceptance and hegemony*" (Bennington and Moore, 2011, p. 6). Third, policy and management strategy should be operationally and administratively feasible. The operational capacity is to be established accordingly: the capacity consists of resources, such as skills, staff, technology and finance within one or more organizations, which depend on each other. These resources need to be harnessed and mobilized (Bennington and Moore, 2011).

Moore's reasoning for both the strategic triangle and certain tools which followed was based partly on the widely used performance measurement tool Balanced scorecard (BSC) by Kaplan and Norton (1992). Moore deemed the BSC sub-optimal for the purposes of the public sector, although it was being widely used also there (Moore, 2003). Although the BSC offered a way for incorporating other perspectives than that of financial performance - customer perspective, innovation and learning perspective and internal business perspective - to the objectives to be considered, Moore (2003) argued that for-profit companies would always give the financial perspective highest priority. Public organizations are measured by non-financial measures aligned with the social mission which justify their existence in the first place, not by how much customers would be willing to use their services. (Moore, 2003). Yet similarly to the goals of the balanced scorecard, the strategic triangle and the tools which later accompanied it aimed at assisting managers in determining whether or not to proceed with an initiative.

Public value has also raised criticism. For example, Rhodes and Wanna (2007) articulated concerns regarding several aspects of the theory, among which were that the theory 1) downgrades the role of politics and downgrades the role of the democratic political process as the paramount mechanism of resolving conflicting interests and 2) insufficiently takes into consideration the "dark side" of the government, deeming the stance of the theory as naive:

*"Actors in these contexts are considered to be interested in the well-being of others, not exploitative, cabalistic or predominantly self-interested [...] Power imbalances both in the bureaucratic chain of command and between state officials and customers, citizens or interest groups are assumed away or played down."* (p. 409).

Also Williams and Shearer highlight the issue of empirically testing the framework (2011). For a thorough literature review on the public value theory refer to Williams and Shearer (2011).

Despite these critiques, there have also been numerous applications of the theory. For example, Cordella and Bonina (2012) apply the theory on ICT enabled reforms in the public sector and also provide an analysis on the theoretical context of the public value theory.

Rather than provide a detailed description on the correct application of the public value theory or the strategic triangle, in this research the theory serves as an illustration of the dynamics of value creation within the public domain.

## 2.4 Summary of the private and the public perspectives

Given that customer value is receiving increasing attention in the competitive markets and it is often becoming the guiding tenet for organizing operations, customer perspective was adopted as the starting point for this research. The first research question of the case study is:

*"1. How is customer value perceived in CSC?"*

The pursuit of customer value is not necessarily as straightforward for CSC as for a commercial company, given that CSC operates in the public sector and is governed by certain principles uncharacteristic for a market facing company.

The public and the private perspectives on value presented in the theoretical framework of this research approach value differently. Public value theory describes public value as something which is collectively consumed by the citizenry. Marketing theory on the other hand, describes customer value as hierarchical and layered as well as context dependent and usually describes value as private, in that it is somehow experienced by an individual institution. This is often referred to as value-in-use. Instead, public value is something of greater abstraction. On the other hand, also marketing theory identifies that customers can be motivated by abstract, high-level goals, such as a sense of a purpose or social responsibility. These value types bear resemblance to public value.

In general, public value views outcomes from a more collective perspective than customer value. A single customer, be it an organization, might seek an outcome which is optimal for itself, whereas this outcome might even be contradictory to the benefit of the

collective good and the value thereof. Thus, private (from the point of view of an organization) and public value objectives might be contradicting with each other.

According to marketing theory on knowledge-intensive business services, customer value helps to gain an understanding of what kinds of expectations customers might have towards providers; companies which fail at providing state-of-the art service would likely not be in business for an extended period of time because of competitive forces. The better a company understands the different dimensions and layers of value and what exactly it is that customers value in knowledge-intensive business services, the more likely the provider is to gain a foothold in the markets and ensure sustainable business. Customers are getting accustomed to providers possessing or striving to form an understanding of what it is that the customer needs. As the existing providers evolve, so do the expectations of customers.

However, the public domain engages in activities according to what is deemed important ultimately through politics and democratic processes. The public domain includes situations, where, when produced by private sector, the competitive forces which should ensure that prices are kept at a reasonable level are insufficient and instead, in-house production is opted for. In such cases which are common in the public context, decisions on what the public sector and the organizations operating in the public domain pursue are not governed by market opportunities to create value to customers, but by an authorizing environment, which is comprised of legislation, policies, officials, politicians and other parties. Different views might be contradicting and the interests of the different parties might vary. Thus, what kind of value is to be created is not necessarily evident, requiring that the goals are articulated and consensus is sought and agreed upon.

The second research question focuses on the process. The second research question is:

*"2. How does customer value present itself in CSC's service delivery?"*

The public value theory presents three separate aspects which together describe value creation in the public domain: the authorizing environment, consisting of networks, authorities, partners, etc. which defines objectives and authorizes action, the operational capacity, the muscles which completes the action and the public value outcomes, which are the results of actions driven by the value mission goal. Instead, the framework by Aarikka-Stenroos and Jaakkola (2012) considers two counterparts, the provider and the customer as well as the resources both bring and the roles both adopt during the complex, dyadic set of

processes often required for defining and enabling value-in-use for the benefit of the customer.

Whereas a regular company might develop a profound understanding of the collaborative problem solving process which best supports the co-creation of value in-use and optimize its customer facing processes accordingly, a state owned company entrusted with a special assignment faces a different kind of setting. In the public context parties which take part in the pursuit of value creation are not as clear as they are in the market economy, where there is a supply and demand side. The public theory does not discuss through what kind of a process value is to be created; the configuration of operators in the public context is far too complex. In CSC's case, it is evident that CSC is primarily part of the operational capacity taking part in public value creation. It is unclear, whether and to what extent CSC also influences or is even a part of the authorizing environment and whether it is CSC's responsibility to extensively engage in determining the public value goals or whether it should do as it is told. It is perhaps characteristic of the public sector, that the desired value outcome is determined well in advance.

Modern marketing theory would urge providers to try and truly understand the customer's needs and its value creating process and if necessary, try and guide the customer towards a more appropriate direction, which would create longer term value to the customer. Public value theory might urge the provider and other involved parties to do the same by uncovering, whether the goals of the parties are aligned with the public value goals and what could be done, if they weren't.

In CSC's case, one approach would be to perceive both CSC and its customers, and their mutual process of value creation to be part of the operational capacity, which further down the line creates public value. This would reduce the interaction between CSC and the customer to that of any regular B2B interaction, where various theoretical frameworks aimed at market facing companies could well be applied.

As was mentioned earlier, the public sector has often been criticized for being inefficient. In turn, public administration theory often critiques the economic motives which are present in market oriented companies, or presents them in a negative light. Harisalo (2013a) states that the new wave of focus in service research, which bears many similarities with the new developments in public administration theories, including the NPS, is a welcome addition to the discussion on private and public sectors, as it gives common ground, shifting the discussion away from the debate on which one should be preferred for efficiency, public or private sector organizations.

As discussed by Osborne (2018) the nature and dimensions of value in the public context, balancing between the dimensions as well as the counterparts involved in the process of value determination require further research. Therefore, the empirical part of this research focuses on the provider perspective and seeks to increase understanding of customer value within the public domain, by applying concepts from both the public and the private domain perspectives.

### **3 Research design and method**

This section explains how the research was carried out and what methodologies were used to conduct the study.

#### **3.1 Research approach**

The study was conducted as a single case study to enable establishing a profound understanding of the themes of the study in a specific, unique context. As suggested by Yin (2009) the case study can be used to deepen knowledge of organizational phenomena. Factors supporting selection of a case study as a research method include seeking to answer "how" and "why" questions, focusing on real-life contemporary events (Yin, 2009) and not having control of the behavioral events. In this case, the conditions are mostly fulfilled, as the study seeks to explore how customer value is perceived in a specific, contemporary and real-life setting, and as data gathering is done through semi-structured interviews. This also serves as an explanation as to why another research method, such as a survey was not a suitable research method: the purpose was to gain deep understanding of a specific topic, not to validate a specific theory.

The study had no exact propositions due to its exploratory nature. According to Yin (2009) even exploratory case studies need to have a stated purpose and criteria based on which the study can be deemed successful. The purpose of the study was to increase knowledge of how customer value is perceived in the public sector and whether it serves as a guiding factor in the service delivery process as well as what might be the enablers and obstacles of customer value creation during that process.

#### **3.2 Data collection**

Semi-structured interviews were used to gather empirical data in the chosen research setting. The semi-structured interview method was chosen to ensure that the necessary areas of

interest of the study would be covered to support answering the research questions. Also, the versatility of the business units represented by the interviewees supported collecting data through a standard format, leaving enough room for the interviewees to approach the subject from their own perspective as the starting point. The data collection was done during a time period of roughly one month. All interviewees held a middle-level management position at the case company and were in charge of developing their own business lines and acting as superiors in groups of 10-20 people. A total of 9 interviews were conducted. 10 interviews were planned in the beginning, yet at 9 the answers were starting to resemble each other and saturation regarding the first research question was considered to have been achieved. Regarding the second research question, it was identified, that given the versatility of the business lines of the case company, full saturation could not be achieved without interviewing all 23 development managers of the case company. Notably, all major business units were represented by the interviewees: at the time of the interviews the case organization consisted of five service areas, which represented the core service delivery enabled by the company.

A challenge to planning the interviews was that the business lines represented by the development managers were known to differ greatly from one another. Some interviewees were in charge of development of technical components which either constitute a solution on its own, or which are part of a more complex solution, while others were in charge of a host of activities, such as service design, coordination and development to cater to the needs of relatively homogeneous customer segments. Before the interviews, the interviewees were informed of the topic of the interview on a high level by email. This was done in order to ensure that the interviewees would have the same starting point and bring their first impressions and spontaneous answers to the table.

Another key challenge was identified prior to the start of the interviews regarding terminology: even the most central concepts such as customer, service and customer solution were known to be controversial within the organization, which was due to the differences in nature of the business areas and the company's long history. The alignment of service delivery processes was known to be rather low. Therefore, in order to ensure that the interviews would touch upon same topics, a few terms which were known to be controversial and under debate within the company were defined in the introduction section of each interview: customer as referring to the paying institution, i.e. sponsoring organization with the decision making power regarding the purchase, and customer solution as referring to each sales case; combining services to meet the specific needs of a paying customer. In

addition, in the introduction of the interview a few highlights of the studied literature regarding value was made: subjective and hierarchical nature of value, co-creation of value and different perspectives on value, in order to give the interviewees some context to the interview. Despite the stated definitions, interviewees were given the liberty to discuss the topics from their own point of view and with their own terms.

The introduction which was given at the beginning of each interview briefly explored customer value from a marketing theory perspective. Other perspectives were also mentioned, including that of public value.

The interview questions were mapped to the research questions and were organized to a logically sound order. The interview questions are presented in Appendix 1. The interview questions were modified slightly after the first three interviews based on the reactions of the interviewees, to clarify them. Since customer value was at the focal point of the research questions, customer value is also the most central concept of the interview questions.

In order to ensure the anonymity of the interviewees, identifiers are used to refer to the interviews.

*Table 2: Interview details*

	Date	Duration, h:min
1	2.8.2019	01:11
2	9.8.2019	01:18
3	15.8.2019	00:58
4	15.8.2019	01:05
5	16.8.2019	01:14
6	16.8.2019	01:02
7	22.8.2019	00:57
8	28.8.2019	01:16
9	29.8.2019	01:05

During the interview, the questions were displayed on a screen, next to a text field where the interviewer would write down the answers while the interviewee was talking. This approach was chosen so that the interviewees could control what would be regarded as their answer and to remove the need to fully transcribe the interviews in detail. In addition, it was assumed that this technique would help the interview to stay within the predefined scope.

Despite this procedure, the interviews were also recorded. Afterwards, the answers were elaborated in further detail based on the recording in cases where the interviewee had been faster in their speech than what the interviewer had been in their writing. In addition, a narrative was written to complement the answers. After this was done, the interviewee was given a chance to inspect the written answers and to comment in case their answer had been changed too dramatically. Two out of nine interviewees asked that their answers would be reformulated. This was done according to their wishes: it was evaluated that in neither of the cases did this dramatically affect the content of the answer.

### 3.3 Analysis

The primary data analysis method used in the research was content analysis. Based on interviews, the public value theory described in the literature review was used as an analytical framework for evaluating the findings and was used for categorizing the findings. As was mentioned earlier, the key point of this research is to illustrate the different areas of interest relevant for value within the public context with the help of the public value theory.

Although the research questions were compiled mainly based on marketing theory, the analysis was based on Moore's public value theory, more specifically the strategic triangle (1995). It became evident already after the first interviews, that considering the company and its service provisioning from a bipolar perspective (provider and customer) leaves much hidden. Thus, the findings of the primary research were analyzed using the strategic triangle. The strategic triangle was considered to reflect the responses of the interviewees and depict the dynamics of CSC's operating environment more accurately than what marketing theory enabled. The strategic triangle offers an analytical framework both at the company level as well as at the level of individual programs, initiatives and services. (Moore, 2003).

## 4 Findings

In this section, the findings from the primary research are presented. The interviews covered issues from the operational and concrete day-to-day issues, as well as issues on a higher level, such as political steering and corporate governance.

First, the complexity portrayed by the interviews is explored by illustrating the cases together with the strategic triangle (Moore, 1995) by depicting which factors and parties have a role in each of the area of the triangle.



After this, themes regarding value, and more specifically customer value, are elaborated on. Topics elaborated on by the interviewees categorized by the areas of the strategic triangle. The categorization of issues and the placement of the categories under the areas is rudimentary. The categories and issues could also be seen as a part of another area. Interviewees most often focused on the cases which were the most familiar to them.

#### **4.1 "CSC consists of multiple companies"**

The interviewees were asked to describe a typical case and the standard service delivery process. Some interviewees, who were in charge of a narrower range of activities were better able to elaborate on the tasks and responsibilities of their group on a more generic level. Yet most interviewees struggled, stating that there was no such thing as a typical case which would sufficiently describe neither the entire company, nor their own group, and instead approached the matter through case examples.

As expected when the case study was designed, based on the interviews it can be said, that the variety of activities performed by the groups, represented by the interviewees, is significant. One interviewee noted promptly that: *"CSC consists of multiple companies"*, referring to differences between service areas as well as customer segments. Also answers regarding the substance and the nature of the services differed greatly, depicted a company which engages in a broad range of activities from consulting to development of generic services to maintenance of established services.

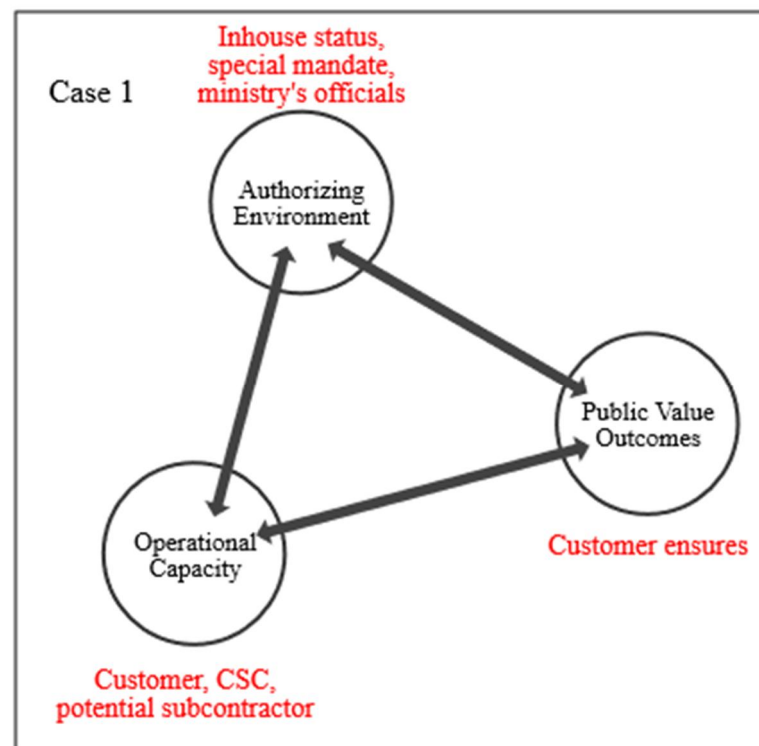
The conducted interviews also portrayed a highly complex operating environment in which the governing logic of CSC cannot easily be labeled as being solely based on authority. The number of customers, funding organizations, consortia, users, organizations and formal and informal networks, whose needs are to be satisfied as well as CSC's task varies a great deal in nearly each case, as does the time frame, scale and scope of the cases. The same organization might simultaneously be a shareholder, a paying customer, a partner, a provider and have representatives in the various networks in which CSC operates, depending on the case. Networks and potentially also competitive forces are a significant part of the authorizing environment, yet CSC does not necessarily always have visibility to the authorizing environment behind a customer's requests. The parties and their roles have a varying influence on CSC and therefore, the governing logic can be identified as being hybrid.

Also, given that these parties do not strive towards private value, a focus on customer value is too narrow of an approach. The services and solutions and the objectives which they

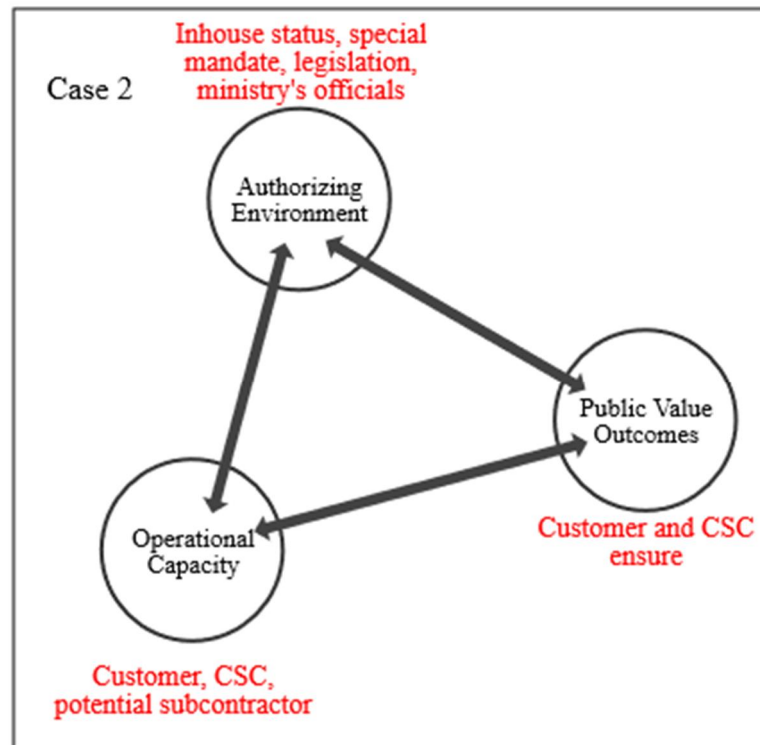
are intended to contribute towards, as well as CSC's role in building them, vary in many regards.

Although the strategic triangle's primary use case, as portrayed by Moore (1995) is in stating the composition of the areas beforehand, the areas of the strategic triangle can also be applied in retrospect. To illustrate the versatility of the operative environments laid out by the case examples described by some of the interviewees, the cases are here illustrated with the help of the strategic triangle. Only some of the most evident aspects relating to the three areas of the strategic triangle, which could be identified in the interviews, are elaborated on. In reality they are likely to be far more complex.

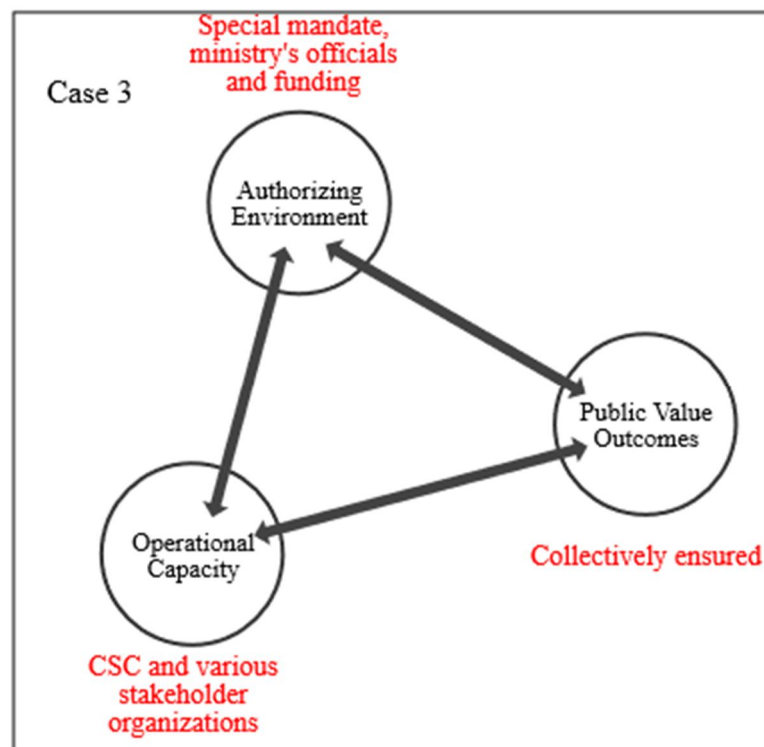
Case 1: A unique one-off solution built to meet a single customer's needs, to serve a specific part in a larger process, to which CSC might have poor visibility.



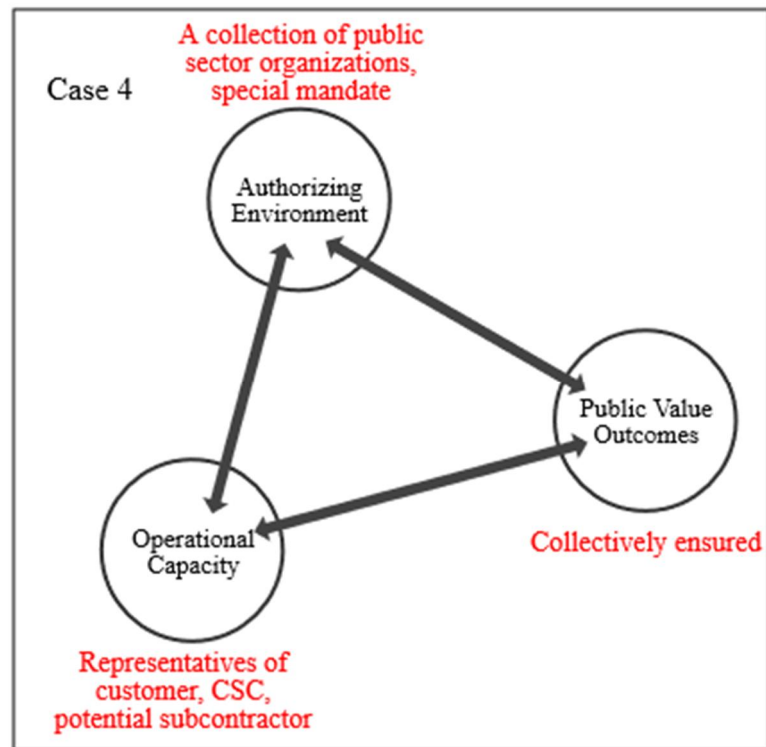
Case 2: A one-off solution to a single customer, which might be the ministry in the role of a purchaser, where CSC is responsible for the development of the entire service, aimed at end-users. Oftentimes the justification for these solutions come directly from legislation.



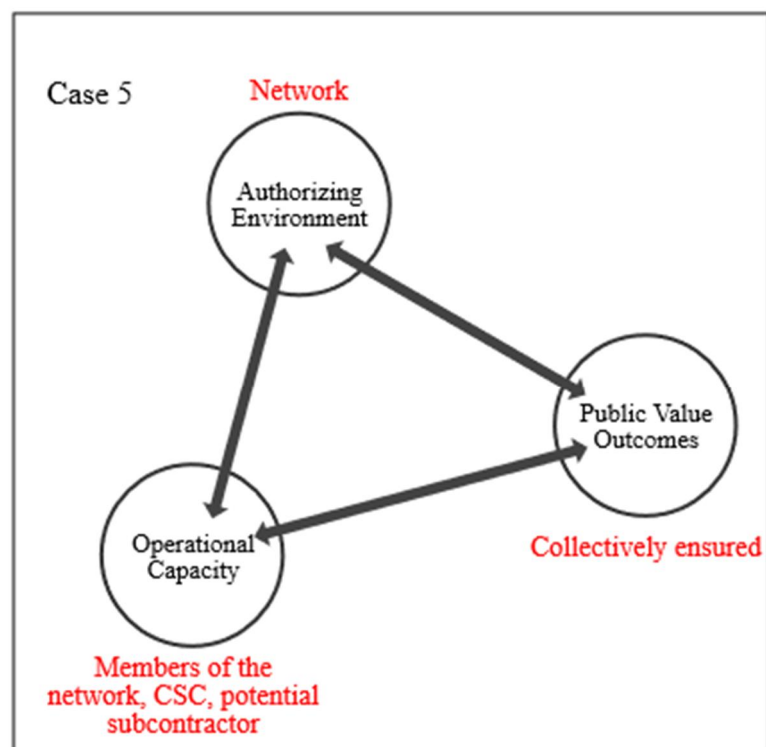
Case 3: A one of a kind service funded centrally, where CSC is responsible for the development of the service and the related processes, which is strongly influenced by stakeholders, such as organizations who will use the service in their own operations.



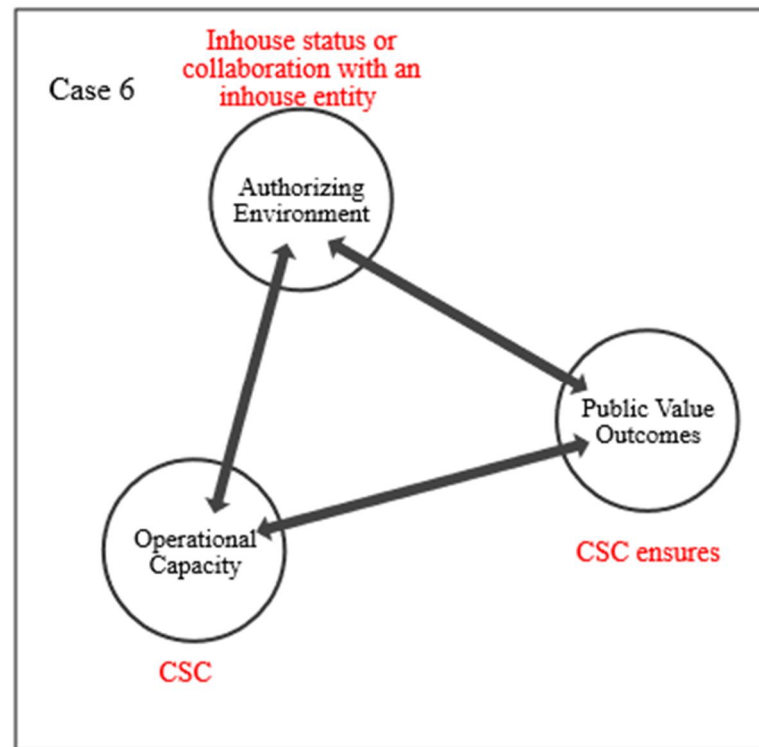
Case 4: A solution which is centrally developed based on the needs of a collection of paying customers.



Case 5: A solution which is replicated through a well-defined process, in which both CSC and the customer make contributions. Often preceded by a pilot.



Case 6: A standardized service, which the customer can acquire with little interaction with CSC. CSC might also be in charge of serving the end users.



It is noteworthy, that additional configurations are likely to exist; for example, CSC operates in multiple international projects funded by the EU and takes part in development efforts in international networks, which were not of primary interest to the interviewees, although they were mentioned by a few.

## 4.2 Public value outcomes

In this section, the findings which relate public value outcomes are elaborated on. Indeed, public value was identified as a potential driver of CSC's operations. All interviewees discussed the social mission as a reason for CSC's existence. As stated earlier, the public value outcomes in Moore's framework refers to the realization of the ultimate value mission goal, which usually is the objective which binds together the sometimes numerous actors taking part in the execution of public policy assignments. Public value is collectively consumed by the citizenry. The public value theory indicates, that the objectives should be articulated and commonly agreed upon beforehand. This should be done together with all operators, so that value leadership is enabled. Marketing theory presents value as hierarchical in B2B markets, where on the topmost layer the value objectives resemble public value objectives. (Almquist et al, 2018).

As noted earlier, CSC's responsibilities regarding specifying and ensuring public value outcomes vary greatly. Only in rare cases is CSC solely responsible for ensuring that overall objectives of public domain initiatives, in which it takes part, are achieved. Usually, simplistically put, CSC operates for the benefit of another organization as a business service provider, where the customer organization is responsible for the public value outcomes. Because of this, public value outcomes, specifically, were not discussed much in the interviews, but usually as a part of customer value, which also was the primary focus of this research. Sometimes, the public value outcomes are even further away from CSC. In that sense, CSC is a traditional vendor, which provides services according to specification and is measured according to how well it meets the specifications. The customer value which CSC's immediate customers experience on a more private level, is elaborated on together with operational capacity.

#### 4.2.1 A common mission

The interviewees were asked as one of the first questions to describe specifically from different perspectives (business, customers, shareholders and society) on the value which CSC enables. Despite this separation in the question, most of the interviewees considered the customer, CSC's business, shareholder, and the public and the respective interests as one and the same. It was often noted, implicitly and explicitly, that all actors - CSC, shareholders and customers - are driven by the same societal mission, such as education, research or culture. A few interviewees noted that customers and owners are ultimately the same and thus, their goals are also the same:

*"Customer value is the reason for our existence, that we create value to our customer and our owners."*

One interviewee specifically stated that public value was more important than value to CSC's business. Some interviewees stated that CSC didn't have business goals, referring to the non-profit business logic of CSC, and instead viewed assisting and enabling the fulfillment of the shareholders' goals and objectives, such as promoting education, research and culture as the reason for CSC's existence.

Two interviewees also provided the societal mission as a reason why many employees choose CSC as an employer in the first place:

*"In practice I'd bunch all of [customers, CSC, shareholder, society] together, since we are owned by the state and we have a certain mission. Many are working here, since they want to do something for the common good."*

After pointing this out, most interviewees elaborated on what kind of activities CSC engages in with different stakeholder groups and what kind of value outcomes the activities have. Also, the answers highlighted a struggle between different parties and their respective objectives. These are elaborated in the section on operational capacity.

#### 4.2.2 Impact and effectiveness

The interviewees were asked specifically about value assessment, measurement and verification and the topic was elaborated from several points-of-view, similarly as the value perspectives were. That operations have to be effective and have an impact was noted by a few interviewees. The findings relating to measurement of value to the primary customer segments is elaborated on later in the section on operational capacity.

One interviewee elaborated in the following way on the objectives of shareholders:

*"Owners look at societal impact [...] Our value is also in that we do not engage in individual solutions but we look for synergy e.g. by creating networks and finding common needs through them, since they cannot easily be found."*

In the same way, another one discussed in the following manner:

*"The value which CSC produces is diverse and multifaceted. Since we are strongly a social actor in that we produce solutions to the public sector, which operates on tax revenue, also our operations are based on tax revenue. Of course there's a societal significance behind it. What we do has to be societally impactful and in my view follow-up of the effectiveness and impacts of the operations is important. We have to be able to prove that what we do is meaningful."*

Several interviewees elaborated on measuring value as an integral part of the service: analytics on e.g. volume and number of users, uptime of service as specified in service level

agreements were noted by several interviewees. Regarding societal value, through promoting science and education, research and cultural heritage, one interviewee stated:

*"Whether we measure this or not - is perhaps not our job. [Societal value] is created perhaps on a higher level, we take care of our own area."*

Another interviewee noted, regarding areas of improvement, that:

*"[...] we should improve evaluation of the societal impact. For example, we might collect usage data or other numerical information of an individual service. Recently we did a test [...] We managed to bring forth the impact of our operations on a whole different scale. This kind of doing could be developed further. Since we often are at the background - the ministry [...] owns the services which we produce, making it difficult or challenging to make visible the value of what CSC does, when it's not our service, but instead we deliver them for another organization."*

One interviewee noted that CSC has for long kept track of scientific research papers where its high performance computing services have been used in an attempt to display their societal impact.

Another interviewee stated, that customer value is created, when the customers, i.e. owners are happy. They noted that cost efficiency as a desired outcome is highlighted from OKM's perspective: *"Doing things centrally saves money."*, yet in another question they noted, that cost-effectiveness was only of limited importance in the bigger picture. Some interviewees elaborated on having performed cost assessments of different alternatives when planning the service as well as continuously. In both cases the centralized model had been proven to result in lower costs. In other cases, in e.g. joint tendering, direct monetary benefits were also noted. One interviewee connected societal objectives to increasing prosperity of Finland as a nation and noted also the spillover effects enabled by CSC to innovation and business.

### **4.3 Authorizing environment**

As noted earlier, the authorizing environment consists of a coalition of partners and agencies of public domain whose support is required for pursuing the stated value objectives. This will enable the necessary legitimacy to be established. Yet, the authorizing environment is also the place where many different views and values seek acceptance and dominance. Here,



the authorizing environment is used to also refer to legislation, as legislation might be the direct or indirect reason for CSC's service delivery. Also other reasons providing legitimacy and support as well as factors undermining them are discussed.

During the interviews the authorizing environment was not explicitly discussed, as the main focus was on CSC and its closest stakeholders, especially customers. Notable factors which can be connected to the authorizing environment were brought up. The authorizing environment might include the customer, as in the traditional sense, as commissioning service delivery. On the other hand, it also consists of aspects which legitimize the service delivery commencement. The same aspects also serve as a filter for CSC. Given that CSC is usually only one actor involved in an initiative which seeks to create public value, the authorizing environment can at times be large, distant to CSC and consist of international as well as national actors in which case only a minor part of it might be directly visible to CSC. On the other hand, the authorizing environment might consist of only a few actors.

The authorizing environment also makes the hybridity of the governing logic of CSC more visible. CSC is governed both by networks as well as direct authority, in cases of pure in-house production. Characteristics of bureaucracy can also be identified in certain mechanisms which affect CSC. Also in these cases it is necessary to evaluate whether all parties share the same value mission goals. It seems that the differing value objectives of involved stakeholders are present in CSC's day-to-day business and the hybridity of CSC's governing logic occasionally shows as conflicts, which need to be tolerated. Customers might perceive CSC as a regular service provider, although CSC does not fully operate like one, which might cause uncertainty and information asymmetry between parties.

#### 4.3.1 Special assignment and in-house status equal business goals

When the interviewees were asked about CSC's business goals, the in-house status of CSC was mentioned by nearly each interviewee, usually as a self-explanatory fact. The special assignment mandate - also elaborated on as a legitimating factor by nearly all interviewees - stated in CSC's articles of incorporation determines, that CSC should offer services primarily to shareholders. Thus, when the state or higher education institutions are the ones buying CSC's services, the authorizing environment might simply be seen to consist of themselves, if they have a need for services for their own. Although in the case of higher education institutions, as explained earlier, the needs of an individual institution might not suffice, as CSC should serve the entire segment. One interviewee elaborated in the following way on CSC's top management's perceptions on the matter:

*"CSC's management often highlights that our role is where there are common things to do, and where it's not in some sensible manner possible to find from commercial markets or where it might be possible for a commercial company to establish a monopoly. This would be bad from the perspective of the public administration, or state, meaning us."*

Others equated CSC's business goals with the mission defined by the special assignment. Four elaborated on CSC's business goals as such: two equated CSC's business goals with the company's current strategic goals while another interviewee elaborated that CSC's business goal was to cause as strong an impact with as little resources as possible. One interviewee described, that:

*"We certainly have objectives regarding quality: for example, availability and usability figures, which we report on to different directions, including the ministry as the owner. We don't have business goals which are in financial terms. Our goal is also that we possess expertise to help and go near the customer, and write best and worst practices. We are happy to give advice and visit the customer."*

The interviewees highlighted that non-profit meant ensuring financial viability.

*"In a non-profit company the connection is not as straightforward. There's significant fluctuation in how much value, business and revenue is generated, a profit barely anywhere."*

#### 4.3.2 The state connection

##### 4.3.2.1 Annual contract

CSC's revenue is almost solely generated by so called in-house entities, yet the most significant portion comes through the contract between the majority shareholder, the state, i.e. the Ministry of Education and Culture. Yet, the sub-parts of the contract differ: in some cases, the customer takes on an active role and in others it's role is that of a more passive funder. The contract is rather stable from one year to another and it was regarded by several interviewees, often discussing the contract from a certain sub-part, as a significant enabler of value creation:

*"[...] That we can offer services and support broadly without contracts makes operations a lot easier and also enables serving small customers. This makes the life of researchers easy and reduces friction."*

In general, the proximity and the availability of resources, which CSC enables, was seen as a positive thing, as elaborated in the following way by another interviewee: "We have a stable pool of resources, which is at the use of the owner both in larger and in smaller things, which I presume creates added value. Collaboration can be less formal and tighter."

Another interviewee indicated, that the logic of public sector, manifested in the contract, was inherently different from the private sector:

*"The logic of the public sector steers the customer relationship and the development of customer solutions, the operations and processes. It becomes visible in that the operations of the following year are determined at the end of the previous year: there are contract negotiations, the frames for operations are decided upon far into the future, volume, resources. If you compare to the private sector, where there's more of a product centric approach, where sales and growth are pursued [...] We know that we have resources when we start execution."*

Yet, the contract also received some criticism:

*"[The contract's] sub-parts and the value which the end-users eventually receive are not synchronized. From the ministry's perspective important administrative things are invested heavily in, on the other hand services which are important for Finnish science not so much. If researchers had the chance to reorganize the contract, it would look rather different than today. Of course, the ministry's end goal is to steer and do things, which the researchers do not directly want, but still."*

One interviewee discussed the contract from the perspective, that it could be developed in terms of a financing tool for research:

*"A lump sum, which is negotiated with the ministry, then offering things to researchers. Not a bad model, but not the best one either. The same model, which has been used as long*

*as CSC has existed, so it could perhaps be redesigned into a more dynamic and truly customer oriented one."*

#### **4.3.2.2 Ownership steering**

The impact of ownership steering appeared differently to the interviewees: one had experienced it concretely on their job and discussed it more, whereas two others mentioned it, but didn't exactly know what it implied. Notably, in the ministry, purchasing and ownership steering are done by different departments. One interviewee elaborated:

*"With customers we operate very closely [...] The dialogue influences CSC a great deal. Owners on the other hand, not so much. The board [of directors] naturally does have an effect, but ownership steering is not so strong in my eyes. But since the owner is also the largest customer, it affects."*

Another interviewee noted, that customer ownership was currently being worked on:

*"Customer ownership process is currently being developed, which is good, concepts and KPI's are being defined. Currently there mostly is nice sentences on slides."*

The process was not elaborated on more.

#### **4.3.2.3 The political factor**

Ultimately, politics determine legislation and the legislation can be directly visible in CSC's top line. Thus, the authorizing environment might include new or changing legislation. It might mean new business opportunities, vanishing business areas or customers, or changes to old services. The most direct impact was elaborated on in the following way by an interviewee:

*"Our operations are often based on legislation, and we have to interpret the law and craft it into a solution and think of it as a service."*

According to the interviewee, having to interpret law affects how well the customer conveys their requirements to CSC: the requirements can change suddenly, if the customer is still processing and interpreting legislation, potentially complicating CSC's operations.

Another interviewee elaborated on the same issue:

*"The ministry is under political steering. [...] Political changes bring changes: for example, something is given up on, and there's no more funding from OKM. Political steering might paralyze or slow down operations. For example, currently the government changes, the minister changes and the government program is being made. Civil servants Act based on what is decided. This might bring idle time to some parts and in the next phase, a lot of things should already be ready. We need to be familiar with this pattern, although we don't do politics. [...] But it's not like the ministry's operations is totally unpredictable, probably much more stable than in many companies."*

This presents itself oftentimes in the form of budget frameworks, in which funding might be cut. On the other hand, this was noted to affect CSC as a purchaser and as a service provider.

Another way in which legislation can change the authorizing environment is by establishing completely new actors in the field. For example, a new agency might be formed to serve a specific need, as one interviewee pointed out, which might e.g. change CSC's relationship with the customers or completely remove it.

#### **4.3.2.4 Financial implications of state connection**

One interviewee associated the state connection with an interesting thing:

*"[The connection with the state] is both a benefit and a hindrance. It gives freedom, but on the other hand it enables the upkeep of unnecessary things for too long."*

Having the authority to pursue things is greatly important to CSC.

*"[The state connection] enables a more long-term orientation in what we do. You can do things, in which value is not immediately manifested. In corporate world, if there are no immediate results, you quit."*

while another interviewee noted that long-term orientation was an integral part of commercial companies as well. Another interviewee elaborated:

*"Value is not always what has been thought of or what has been pursued. It might even be surprising and take you far. Something, which was thought to provide value, doesn't. Similarly, to a regular business: it's not that you always know how popular a service will turn out, while something else might totally get out of hands. It works just the same way."*

Another interviewee noted, that:

*"We don't have to look at euros in the same way as in the private sector." Also the ability to operate at a lower cost was noted: "Given our in-house status, we operate on a more protected market than a commercial actor. This means that we don't need to incorporate risk which can be seen in our prices."*

In the past few years, CSC has been authorized to add a 3% profit margin to its prices, which were earlier supposed to only cover costs. This was also discussed by a few interviewees:

*"[An obstacle is] something that is already improving: the non-existent profit margin and the development reserve which accumulates through it. Even a small change would improve the situation. We have very few resources to develop anything on our own."*

### 4.3.3 Networks and coalitions

#### 4.3.3.1 Power of networks

Apart from rather obvious factors which have a direct influence on CSC, a collection of customers often provide legitimacy to the endeavors which CSC is a part of. CSC is well known in many networks and has access to them:

*"We are allowed in negotiations and we are seen as a neutral player, many of our stakeholders see us as a neutral player. If we were a commercial company and we'd strive to get to these negotiations, we wouldn't be let in on in as broadly."*

Networks are seen as a significant asset:

*"For example Funet and the proximity to the customer [...] almost automatically this forms support networks, out of which everyone benefits: not just the value which CSC creates, but also, that we do together and form networks."*

Apart from being well connected to international bodies, various national more or less formal coalitions, steering groups and working groups, which operate either at a permanent basis or as parts of a larger undertaking have an impact on the field in which CSC operates.

#### **4.3.3.2 Creating networks and pushing for cooperation**

One way in which CSC can be considered to specifically engage and influence with its authorizing environment are through the creation of networks. Four of the interviewees highlighted that the shareholder, especially the ministry in the role of the owner expects CSC to seek and push for collaboration and partnering among different organizations, both paying customers and members of networks and other stakeholders. Four interviewees described CSC's role to be proactive in this regard.

That CSC is capable of making new networks was elaborated as a strength by one interviewee in the following way:

*"Our value is also in not engaging with individual executions, but instead finding synergies by e.g. creating networks and through them compress common needs, since they are not easily found. [...] We're able to squeeze out of the needs of multiple customers a very unified solution, which serves more broadly."*

Thus, in addition to serving as an operative resource, CSC also actively engages and influences the authorizing environment.

CSC often also takes the role of an integrator: by bringing different customers with similar needs together on the organizational level, but also within a single organization. This was elaborated by several interviewees:

*"[...] several actors also trust, that we are also enabling the collaboration between others. There are several projects, in which we only do a small part, but in reality we're the operator, which connects and through which different parts of the state and national operators find each other. We're the glue in between. We can even serve as the glue between a large organization's different units."*

One interviewee noted that the customers probably did not see the value of this.

#### **4.3.3.3 Need for increasing customer awareness**

Despite CSC being well known in certain networks, some interviewees saw room for improvement regarding how well CSC was known:

*"[An improvement area] would be to increase the awareness regarding CSC. We are rather well-known among our customer organizations, but not as [well-known] as it could be. Especially regarding basic services, producing added value would be easy if there were more service users."*

Another interviewee called for a different approach to external communications in order to improve value creation prerequisites:

*"[...] that we'd support and emphasize more the open, confidential communication within our partnering, collaborating and customer organizations. I'd claim, that in communications and marketing [...] we should bring ourselves forth more, that we're your friend, partner and we want to help you. That type of cases and services, not how we currently do: Funet and the super computers. In comparison, other services and what we do is brought forth very little. [...] CSC presents itself as a gray box, although in reality we do extremely interesting projects. [...] Our external communication is rather grey, it lacks personality."*

#### **4.3.3.4 Perceived zero sum game**

Sometimes groups of customers are formalized and they jointly steer CSC in relation to a specific service. According to some interviewees, depending on the context, this collaboration among customers can work well or not so well. A dilemma was noted to exist between customers, in certain segments:

*"One customer might think, that their resources are used for the purpose of others [...] Someone's saving might be someone else's expense."*

This fear was said to affect the development of new services.



Another interviewee elaborated on the same topic from CSC's perspective, when asked about potential value conflicts:

*"The traditional problems are present, for example, to which customers do we want to produce with the current resources."*

Another interviewee elaborated on the same issue from the customers' perspective, how the interests of customers might contradict each other:

*"There's always a customer segment, who feel that 'We do not need this kind of a service'. At the same time, another one does. Whether we should put resources into this or not is a contradictory question."*

#### **4.3.3.5 Occasionally reluctant customers**

One interviewee stated that customers who are an integral part of the authorizing environment occasionally consider it a nuisance to work with CSC:

*"A part of the customers do not see the value the way we actually produce to them, but instead they perceive us as a necessary evil. Although in reality, without us they could not operate in the way in which they currently do, but they do not see this added value."*

Whether this distaste was due to CSC itself or due to the objectives which CSC involvement represented, remained unclear. Not having to do tendering was noted:

*"[...] Partnerships are increasingly being established based on the thought that collaboration with CSC is easy and fun and it creates added value, instead of it being the only way where we can purchase and we have to purchase from there. That CSC is happily chosen as a partner, not just because we don't want to do tendering, which seems to be the primary discussion. But that they would see, that there is other value than just saving the cost of tendering."*

One reason for this was that their daily lives and collaboration would become easier. Another interviewee elaborated on tendering in the following way:

*"Since we're owned by the state, we're treated as their own, which brings trust and ease of doing business. As an in-house operator our services don't have to be tendered, which also eases things."*

In other cases, on a different side of the organization, CSC is often a sought after partner:

*"[What helped was] of course that the organization expected CSC to do this and meet their needs. They were in need and were eager to get rid of the previous service provider. [...] The organization's attitude towards the service and its development were just right for us and the conditions were optimal, since they had a need and we had prerequisites to fulfill the need."*

#### 4.3.4 Conflicts relating to defining value objectives

Despite the initial notion that all parties have the same ultimate goal, some interviewees also elaborated on issues which they had faced in relation to value objectives.

Three interviewees referred specifically to end users as customers and regarded their experience as extremely important. One of them referred to co-creation as stated in the introduction of the interview, stating that only when a service was used was value truly created. Some interviewees discussed, in relation to different cases, a conflict between the different parties: the ambitions of the customer, e.g. the ministry in the role of a purchaser and the needs of an end user were not always aligned. One interviewee highlighted a central dilemma:

*"Challenges [regarding value] are maybe more in the customer's end: are we customer oriented by serving the researcher or their employer. This is not exactly CSC's fault that the customer organization wants to do something else than its researchers."*

One interviewee indicated that there is a gap between politics and implementation:

*"[...] The ministry strives towards its own goals, which partly come from politics and partly from the officials' own perspectives, which might be official-like and partly distanced from the international world of research."*

Specifically, in the context of research, it was noted that while officials have a national perspective, the world of science and research is international.

*"In relation to research: in a way CSC is also a tool of scientific policy. We do things, which are not necessarily best for the value creation of the researcher, but which steer the researcher in such a direction from which the society and perhaps also research sometime in the future will benefit, which a regular business would not do. The perceptions of societal value and the customer organization and especially an individual researcher might differ."*

In addition to potentially varying perspectives on what should be done in the first place, one interviewee elaborated in the following way on value creation in a different kind of context:

*"In a typical case, the customer has an ambiguous need and they're in a great hurry to start execution. Yet it requires plenty of time to understand what is even meant by this [...] Solutions are expected to just happen, it's like 'They should already be ready.'"*

A reason for this might be the "[...] fast political will", which another interviewee mentioned: certain customers, especially ministry officials, driven by political decision making, might consider completing assigned responsibilities more important than how the outcome turns out to be:

*"Oftentimes customers order solutions, which are primarily to their own needs, but which eventually is meant for a wider audience. In these cases, they can't be bothered to think from the perspective of the customer, what value is brought to a wider group of stakeholders."*

The previous interviewee later, regarding areas of improvement, noted that:

*"Different stakeholders and end-users should be involved more when mapping needs and developing services and solutions. When it comes to co-creation: we say [in our strategy] that we create value through co-creation, but I don't think we are quite there yet."*

#### 4.3.4.1 Strategic focus

One of the rare things that was widely discussed by interviewees and on which the answers seemed to differ, regarded ultimately whether or not CSC was likely to turn down a case. Some indicated that CSC would, whereas others indicated that CSC would oblige to the requirements of customers.

Although the authorization might be in place and relevant for CSC, according to some interviewees CSC might and should turn down business cases. As stated by one interviewee:

*"[The state connection] should constantly affect how we choose our business cases, what we accept to start working on and what our goals are."*

Based on the interviews it seems that CSC's involvement in a case needs to be well justified and that in comparison to a private provider CSC is more likely to turn down a business opportunity:

*"We have also said, that there's no point in us doing this, you get a cheaper price if you do it with someone else. This is different in some other business and here I see a big difference. Of course, we try to ensure profitability, but we do not try to maximize profits."*

It was noted that in practice this was not easy, nor did the interviewees elaborate on how this is usually done.

Some interviewees perceived that turning down cases or directing them elsewhere and advising customers was also CSC's duty.

*"The growth of CSC is not important in my opinion. It's important, that we do things, which the owners and customers want and need. It's important that we refuse doing things in which customer value is trivial in the big picture, although it would bring value to some group. We should be more customer oriented, but understand that it means something different for us than for a regular IT-company."*

On the other hand, one interviewee elaborated that:

*"We are widespread, low vegetation on the surface of our customers and although we try to make strategic choices, we live very much based on what our owners and customers*

*think, which is probably also a good thing. [...] Nowadays this is acknowledged much better in our strategy."*

Three interviewees explicitly discussed the pursuit of customer value and obliging to the requirements of customers and owners, which they thought was very characteristic of CSC, as a limiting factor to CSC's business:

*"CSC engages, surely much more than any other commercial actor, in active dialogue with its customers, in an attempt, sometimes even too much, to fulfill the requirements of its customers, instead of following its own strategy and vision, which might enable producing a greater benefit in the long run."*

The three raised the question of whether CSC should focus more on its own objectives and narrow down the scope of engagements for the same reasons. As stated by one interviewee:

*"Our service portfolio becomes rather complicated, it has exploded."*

One interviewee indicated that they'd noticed this issue also internally:

*"Our customers are unique, large and small. Clearly at CSC some people perceive some as more meaningful than others, and the opinions and ambitions of others are not considered as meaningful. This is rather clear. [...] The similarities [between customers] should be considered very closely, since it affects for instance, what kind of services CSC should offer. The larger the group using the services, the more successful it usually turns out."*

Another interviewee thought that a change in this regard was already taking place:

*"[...] Now it's time to pull together some things we've done and what we know. This is already visible in the organization as we focus more on the biggest strategic objectives and themes, we're doing processes and productization. It also includes clearly stating what's not available from us."*

One interviewee noted that on one hand the high concentration of operations enables, since broad expertise is available, and on the other hand it undermines, since everything is done with few resources. Another one noted the following:

*"Investing efforts is difficult and slow. Bold strategic initiatives are embarked on, but with a small effort, and thus in reality, you don't embark."*

Another one noted on the development of value creation prerequisites:

*"The broad lines are not such, which we can develop [...] Large changes would require changes to the [customers'] structures."*

#### **4.3.4.2 Restrictive procurement legislation**

In CSC's case, the authorizing environment can be regarded also from the perspective that it clearly restricts CSC from pursuing a business opportunity, a perspective which was elaborated on in most of the interviews. Especially the procurement legislation was discussed almost solely as a negative factor:

*"Partly, the development of our business is in good and in bad slightly difficult in our current ownership, especially because of in-house legislation. Strong steering and little chance of selling outwards, making it difficult to develop our business. It might be better in a long term for CSC's growth and customers, since we'd be able to amortize costs on a larger group of customers. We aren't able of creating as much value which we otherwise might."*

Simultaneously, the purpose of the legislation, which is ensuring competitive neutrality of markets was acknowledged:

*"We do not want to produce services which you get off the shelf. CSC should be able to produce added value to the chain, service provisioning needs to be justified. According to our mandate, we are not supposed to cause disruptions in the markets."*

On the other hand, knowing the difference is not always straightforward:

*"[...] All customers are not allowed for CSC. Especially the commercial sector, it's traditionally been a difficult and gray area. [...] E.g. higher education institutions want to collaborate with the commercial sector. We think about these with the ministry and ultimately it's the ministry that determines, what we should do."*

#### **4.4 Operational capacity**

As discussed earlier, operational capacity refers to the resources, skills, staff, finance, activities and procedures which are necessary for achieving the desired value outcomes. It is noteworthy that they do not need to reside in a single institution.

In this research CSC is considered to primarily be a part of the operational capacity, although it might also influence or even be part of the authorizing environment. When visions and plans of value objectives are operationalized by the authorizing environment, whichever entities are part of it, they manifest themselves in CSC's daily operations in the form of contracts, liabilities and revenue, service design, development, operation and maintenance, roles and responsibilities.

The degree to which CSC's capabilities contribute towards achieving the ultimate public value goal or to an intermediary goal of a single customer varies from case to case. In the analysis it proved difficult to differentiate this kind of private customer value from public value. Therefore, most aspects relating to CSC's immediate organizational customers are considered here as part of the operational capacity. The logic behind this is that although CSC would build a high-tech solution of high quality for a significant customer, only once the customer, or the customer's customers operationalizes the solution, can value be created. Also, the service research suggests that it is therefore important that the provider develops a good understanding of the value creating process of the customer.

Based on the interviews it seems that although customer value is perceived to be of great importance, there are several factors, some of which were elaborated on in the previous section, that showcase that customer value is not fully understood and accordingly operationalized at CSC. It seems that there are no formal practices for taking customer value into consideration, or for dealing with potential conflicts between customer and public value. Certain factors are also such which CSC cannot influence itself.

#### 4.4.1 Customer value perceived to be important

One of the most uniform answers was unsurprisingly the categorical question of whether the interviewees perceived customer value and customer orientation as important things to consider. Each interviewee stated that they considered them important:

*"Customer value is at the heart of what we do, it's the reason for our existence and our greatest driver."*

Another interviewee elaborated in the following way:

*"They drive my own actions completely and it has to be conveyed into everything which I promote in the house."*

Some considered it a potential driver for operations which should be highlighted more:

*"It's important to highlight customer value".*

Nearly each interviewee also stated that CSC was customer oriented.

Yet some interviewees accompanied their initially positive answers with observations and elaborations. One interviewee noted:

*"We are customer oriented, yet it's good to be aware, that there are different kinds of customers. For example, some operate at such a speed which is not possible for CSC."*

Another interviewee noted that the matter was twofold:

*"On a higher level we are customer oriented, but on a lower level... not so much. We don't invest enough in the user experience of the end user."*

One interviewee noted that customer orientation was sometimes used wrongly:



*"Customer orientation is also important, but it shouldn't be used as a disguise for other things. For instance, if there is no competence to do something, you can't state that it's customer oriented that we do something only once a customer asks."*

#### 4.4.2 A trusted advisor and provider of specialized, high-tech services

When asked to describe CSC in their own terms, nearly all interviewees distinguished CSC from a commercial company as an in-house company of the state operating at a non-profit logic. A few characteristics stood out in the interviews and were mentioned explicitly by nearly each interviewee in the context of CSC's service provision process, internally referred to as customer solution process: 1) the close cooperation between the customer and CSC and 2) serious and thorough consideration for the customer's needs during the entire process. Regarding unique solutions, depicted by cases 1-3, eventually, most interviewees started with the notion that usually a customer, sometimes representing a larger group of customers, approaches CSC with a vague idea of what they want. After this CSC helps the customer in identifying their needs, which potentially leads to them together establish specifications and the requirements through close cooperation. In these cases, CSC aims for a role as a trusted advisor, helping the customer to steer the project in the mutually determined direction. In some cases, especially where the customer was merely looking for consultancy, the final results were often not anything spectacular or special, and what was more important was to have the chance to discuss and understand the topic and alternatives better. Some of the interviewees stated, that a traditional service provider would only do what was asked of them, whereas CSC often takes part in ensuring that the intended solution makes sense and that it is legitimate. The reason for this was the very reason for the company's existence.

In addition to designing, developing, implementing and maintaining complex solutions for specific customer needs, CSC's service portfolio consists of services which fit more general needs or a larger segment of customers. Their provisioning is depicted in cases 4-6. In the other end of the spectrum from the services which resemble professional services are the high-tech resources, which CSC maintains and develops. Regarding these services, the interviewees highlighted cost effectiveness as a primary source of value to customer. In some cases, the development of services seemed to follow the lines of a rather traditional software provider: a need is identified, a service is conceptualized, designed and produced, and its benefits are marketed in order to assist potential customers in making a business case for their acquisition. After this, it becomes a part of the company's service portfolio.

Regarding this approach, an interviewee elaborated:

*"We join forces with the customer already in the beginning and map out their needs: we ask, what would you like us to do for you [...] and do you think we should take part. Of course, we offer alternatives, but of course we at CSC also have a perception of what the correct way is. [...] The view of the community is the most important thing, which also governs the production of customer solutions."*

Often, development involves proof of concepts or pilot cases. Another thing which was discussed in terms of how to improve value creation prerequisites was being more technology oriented:

*"We could be more technologically oriented and follow what happens in the world and bring pre-treated issues to the customer."*

Another interviewee called for foresight in service roadmaps and technology to ensure continued success.

#### 4.4.3 Openness and resource availability

Trust was among the most cited enablers of achieving enhanced collaboration. Transparency and openness was noted to be the primary means of establishing trust:

*"[Value conflicts] aren't necessarily solved in a short term. We try to solve them with the stakeholders through open and clear communication and co-operation. We discuss with our customers and stakeholders and try to bring our own arguments forth and be open, as transparent as possible and that we aren't hiding anything, but instead bring facts to the table from our own perspective, and how we are going to operate based on them."*

Another interviewee stated, that:

*"In terms of CSC's value creation, a significant factor is that CSC is very open towards all its stakeholders and it usually doesn't have any interest towards competition. We are more open than other companies, which enables a better co-operation between customers and others."*

Yet, one interviewee noted, that:

*"[...] We can operate openly. To some people's taste, even too openly."*

Centralization and enabling synergy was a key benefit which CSC offers, as highlighted by four interviewees. Two elaborated that in several other countries the same operations are dispersed to a wider group of actors, whereas CSC is in charge of a host of activities. One interviewee elaborated:

*"To the customers, in many regards CSC is the IT unit, which the customer itself no longer has. If you compare to competitive markets, we are more on the customers' side and in addition, we are more efficient than what the customers could be without support or assistance."*

Three interviewees noted that without CSC the organizations would utilize separate providers and solutions deteriorating the public goal of enabling interoperability. Another interviewee noted that:

*"CSC is a significant enabler: Funet, computing environments, all services, which we deliver. There's a great chance that the services wouldn't be as good, for education and research, if CSC was not there and everything would be acquired from commercial companies. Also quite likely the cost effect for society as well as for our owners and customers would be on a completely different level."*

Almost all of the interviewees also mentioned the experts, which are ultimately the ones enabling service provisioning. They were praised as prerequisite for success. As stated by one interviewee:

*"An enabling and helping thing is a professional team: that they quickly get a grasp of what the customer is after and that they are motivated to find solutions. This absolutely increases customer value creation, also that they're committed."*

#### 4.4.4 Cost-effectiveness and quality

In addition to the intrinsic value enabled by CSC which were elaborated on already in the previous sections regarding e.g. the pursuit on synergies and building networks, in several of the interviews cost efficiency was implied to be an important value which CSC enabled. Especially regarding networks, learning was given as another reason. Many of the interviews also mentioned the use of tax revenue as financing method as a reason for pursuing cost effectiveness, referring to the fact that a majority of the case company's revenue came from the state's budget. Accumulated expertise is offered to the customer organizations at cost price and a small profit margin as is required by the company's articles of incorporation.

Three of the interviewees discussed the quality and reliability of CSC's services as excellent, far better than what was required by stated SLA's and what customers paid for. Some interviewees described how CSC's experts often go an extra mile to ensure the reliability and security of the provided solutions, although it was not necessarily required of them according to the specifications provided by the customers. Accessing resources should be as straightforward and simple as possible from the perspective of the customer, yet this has been a pain point for CSC. Its services have been notoriously difficult to acquire and use, yet according to the interviews, this situation is currently receiving more attention and being improved.

According to two interviewees, customers often fail at understanding how good the service which CSC provides actually is. One interviewee specified that value equals quality with correct price and resources, yet specified multiple ways in which CSC yields benefits to customers and partners. Another interviewee noted that the cases varied greatly in the degree of how valuable they were to the customer: some are of little importance while in other cases the service is business critical. The described cases also varied in length: some were one-off executions while others were long-term endeavors with steady inflow of resources over a period of several years.

#### 4.4.5 Evaluating and measuring customer value

Apart from assessing end results and impact which were discussed together with public value outcomes, being more connected to the operationalization of plans, the interviewees elaborated on value measurement through things such as customer satisfaction surveys, mutual quality review meetings on operative and executive level, and contracts.

Evaluation was implicitly considered to be an integral part of operations:

*"Evaluation was done in discussions over the coffee table: we were thinking a lot, whether it made sense on the customer's side, was it sensible for them to do. On a more 'meta'-level, that this is what they want, but is this what they need and how do we get them to go in the direction of what they need, not what they're ordering."*

Another interviewee perceived the same thing differently:

*"No, no we don't measure, nor assess. It might be brought up in conversation with a customer or internally that something which had been discussed with the customer seemed very important to them. Although we don't actively evaluate, of course we give feedback inside the house to experts: 'The customer really appreciated that, that was brilliant', but there are no measurements or ways of verifying where we're at in that regard. Elsewhere [within the company] there might be. Elsewhere there might be easy ways of measuring."*

In other cases it was implied that measurement was not done in a systematic manner:

*"Of course internally we follow the development and situation of services and we report to the board. In that context we try to take stock: e.g. how many users does a service have, we try to quantify this. But I'd say that regarding the customer solution and the customer, that in different phases we'd measure, is not included in our processes."*

Others mentioned contracts as a form of verification:

*"We make a contract out of everything, in which we write key things about the contents, costs and schedules, and they are followed, meaning that the customer doesn't approve [the outcome], if the agreed upon things have not been fulfilled... This is already one point of evaluation."*

A few interviewees elaborated that the value to customer was difficult to observe.

*"Regarding customer value it can be said that we don't even see all the value which we create, which might sometimes even be a bit problematic. There are indirect effects, such as e.g. improved data quality [...]. We don't see the extent to which it affects, and I don't know whether we need to. But measuring... we cannot do."*

One noted that they did nevertheless try to gauge customer value based on the perceptions of the customers retrieved through comments. They stated:

*"It would be good if we would jointly collect data and parse and measure how much value our way of doing together creates, so that it wouldn't always be on an individual project owner's responsibility. In the education sector there is largely same kind of mechanisms in which the value of collaborating is created, the processes are rather general. If there could be a template for it, so that we wouldn't always have to do separately. It would ease the discussion on different levels [...] Perhaps also improve [the customers'] mutual understanding."*

#### 4.4.6 Customer maturity varies

According to one interviewee, the readiness of customers to handle information system procurement vary greatly: some rely fully on CSC due to lack of expertise in the field of procurement, whereas others try to steer CSC in a specific direction:

*"Some customers trust CSC very much and are willing to outsource a lot. Some are extremely reserved. It also depends on who you discuss with."*

According to three interviewees, value to the customer is oftentimes created already before any sales agreements have been made:

*"If we think about the service process: value can be created already from the first meeting. When the customer comes to discuss with us for the first time, they notice that we have thought about their matters and we have potentially already done some background work based on the information they've presented and that we understand their problem. At the same time, as the process progresses, customers understand that we understand what they need even when they themselves do not."*

Oftentimes the solutions require a highly technical counterpart from the partner's side and in any case, having technical competency also on the customer's side made cooperation easier. On the other hand, CSC often lacked sufficient knowledge regarding the customer's

process to be able to elicit requirements on its own, requiring an open dialogue. As explained by one interviewee:

*"What makes matters complicated is politicizing, keeping things in the dark, and not being able to communicate openly."*

They also highlighted, that the same applied internally.

#### 4.4.7 Lack of alignment at customer's end

In the same manner as one interviewee described the misalignment of value objectives between the owner and the end-users, another interviewee described a misalignment of value objectives between the highest, steering level and the people in charge of specifying requirements on behalf of their organizations, and people in between. The daily, acute needs of those using an information system might be contradicting with the grand vision laid out by the ownership steering. One interviewee explained:

*"[...] the desired value is contradictory [...] there are people from ownership steering, those doing the procurement, and those involved in the collaboration - all are from the same organization. They should want the same things, but in practice they usually do not."*

The interviewee noted that perhaps the way which was promoted by top-level managers involved in CSC's customer steering was indeed the one which should be pursued, but the main issue was in lack of communication and alignment between the different levels of people. This misalignment often causes extra work for CSC, which is expected to deal with the conflicting value objectives. The issue was not only in the lowest, executing layer, but might also present itself among the same people in different context.

Another interviewee, working with several partnering organizations acknowledged that differing value objectives might exist, yet they'd managed to formally agree in phases of service design on how to deal with conflicting perspectives. They regarded this as a fruitful way of resolving potential conflicts during development.

#### 4.4.8 Users and value should be considered more

One interviewee stated, in terms of what could be done better in relation to value, that:

*"Emphasizing customer value is important."*

Another interviewee elaborated in the following way:

*"Thinking about value in the development phase of the service is the first thing you do, although for many it already is so, but it's not been written anywhere: 'Think about this before you charge forward.' That it's identified as something to be handled and that it becomes a driver is already quite a big thing."*

Another interviewee elaborated in the following way regarding the end users:

*"I see a need for connecting customers and users to the development of the services more. In that regard, we'd still need to develop connecting different stakeholder groups to value creation already during service design process. Not just when it's already been produced, but especially in that we'd do better in gathering needs, connect them to the planning process: testing the user interface. End-users, but also the contracting customers."*

#### 4.4.9 Internal issues

The interviewees were asked about internal issues which affect value creation. The number of issues that were raised by an individual interviewee was limited and interestingly, the issues differed from another. Surprisingly, several issues which were known to be problematic within the company were not mentioned at all, which might be due to not wanting to disclose internal issues or that they were perceived ultimately to be of little importance.

##### 4.4.9.1 Organization, processes and tools

When asked about internal factors affecting the company's prerequisites to create value, the most common answer was the lack of common processes and policies for designing and building technical services and solutions:

*"We are capable of producing the required service, but the internal efficiency perspective... There should be more common things, instead of everyone solving them separately."*

One interviewee discussed in the following manner:



*"[...] How do we organize internally to keep high-quality production in control with the correct resources. We've grown significantly lately as an organization and we have a long history of operating at the scale and processes of a small organization, which is no longer possible; we're in a transition phase. It also affects business at the moment: we are forced to say that we don't have time, we can't."*

Another interviewee elaborated in the following way:

*"Growth brings challenges and when we grow, processes have to respond to it. They have to be developed, they have to be clear and newcomers must immediately be made aware of them. Currently they are not clear and they are not the same between service areas. CSC's way of working has been mixed and has suited a small organization, but when we are this many, the operating models have to be clear. Growth is both a challenge and a great thing."*

As noted by one interviewee:

*"[CSC is] the world's smallest full service IT service provider; we offer services for 100 000 people by 400 employees, and this shows, in good and in bad."*

As an example, according to one interviewee, a process for handling more complex cases exists on paper, yet this was insufficient in practice:

*"In complex cases, when CSC builds a service for a third party or for a customer [...] The sales process, CSMs, requirements engineering is involved. There is a process for this, yet it involves plenty of improvisation based on the customer's wishes. It depends fully on what the customers want. In my opinion this is more consultation, which is not necessarily a bad thing, it also creates value. Consulting is just less easily generalizable to several customers."*

Also regarding the development of services, one interviewee noted:

*"We should always think how we can replicate things, the service process: order and fulfillment, the whole thing. This has for long been a thing at CSC which is only done afterwards."*

One interviewee discussed the middle-level management's lack of time as an issue and an obstacle for value creation:

*"[...] Managers are totally overworked. It's a shame that there's not enough time for ensuring [organizational and managerial responsibilities], but these are now being worked on. [...] A certain kind of hurry can lead to that a director or a manager says that this is how much time or money is required, but the information level is not necessarily adequate. You have to reserve time to this kind of stuff, and it will pay off in the next phase."*

The current situation regarding daily operations was summarized by an interviewee in the following way:

*"We have such a culture, that everyone forges their own luck and is an empowered, autonomous actor. Nowadays everyone offers facilitation, but sometimes it would be great to have ready-made services and solutions. When building solutions, many are surprised, especially those coming from outside, out of how small pieces you have to build, while others are already doing those things here, sort of. Why is the service level offered to others so low?"*

#### **4.4.9.2 Communication, collaboration and tools**

Other related critical issues discussed were the need for documentation, responsibilities, recruiting and training of newcomers. One interviewee highlighted the importance of internal communication:

*"[What hinders is that] we don't have models for communicating towards internal stakeholders. At CSC we only know how to communicate with a staff-email, in [companywide info sessions] and within a small group. Or that we'd even recognize that to whom I need to communicate about this. This is an organization wide issue. [...] It might not be possible to find a systematic way, but that we'd actively consider, to whom to communicate and inform. And then, doing this concisely - not so, that 'Here's a two pages*

*long blog, read it and you'll know', or 'Read this group's wiki, then you'll know where we're at.' [...] Don't expect everyone to have time to read all the information that's on the Internet, but with a couple of words and a link to additional information."*

Another interviewee noted, that at times, matters were internally very much tied to experienced and high-profile individuals, and sometimes this was the cause of insufficient communication. As noted by one interviewee:

*"We might have a tendency towards building silos [...] I believe it's in our culture."*

Cross-cutting collaboration between service areas was identified by four interviewees to be more difficult than what it should be. Some also elaborated that suspicion towards other service areas and other groups exists.

Three interviewees discussed the need for providing assistance internally:

*"By asking the right questions we help each other, altruistically, we are on a common mission and very few of us is competing with others or is capable of achieving anything on their own. We should help others, although no-one has to get in over their head. This is important. These kinds of things are increasing, and this is affected by group work and community spirit."*

Yet another very concrete issue was discussed in relation to tools:

*"Whether it's the state's or CSC's fault - we have few tools and processes which support project or consulting work, which is what we do. Indirectly this undermines value, when internal things do not support. We still need to do a lot by hand, which takes time, that could instead be put to talking with the customer."*

Three interviewees elaborated issues relating to writing contracts or other internal processes:

*"CSC has administrative processes, in which what is being done is squeezed into a single identifier, for example in internal systems. [...] This is deeply rooted in our culture and it undermines work."*

#### 4.4.9.3 No culture of failure

Another interviewee noted, when discussing new initiatives pursued within the company, that the company lacked a culture of failure, which they thought was common to the public sector.

*"There is no culture of failure, you never fail in anything, which comes from the environment, it's rather common in the public world. When you have many things to deplete on your table, you do not anymore have what it takes to pursue new things. CSC could take a step towards a normal company, where failures of initiatives are admitted. This doesn't perhaps have anything to do with creating value anymore - or yes it does, in that if we have something which doesn't create value, it takes too long to wind it down."*

Later, when summarizing things to improve on the same interviewee articulated:

*"We should be even better at identifying the unique nature of our operations and develop the culture of failure. It's not a shame if you fail at something. At the moment things disappear somewhere, slowly."*

## 5 Discussion

Customer value as well as public value were perceived as highly important for CSC's operations by all interviewees. They discussed the social mission a reason for CSC's existence. It seems that customer value is incorporated into the operations in various ways.

However, analysis showed that the matter is more complex than what initially seems. Understanding the role and the type of value within CSC, a state majority-owned company with a special assignment requires a twofold perspective. On one hand CSC can be viewed as any company serving organizational customers and thus the matter can be approached from a marketing and service theory perspective. On the other hand, the special mandate as well as the in-house status requires that a public administration viewpoint is adopted. The two perspectives are not necessarily conflicting, but instead can be seen as part of the same overall objective, relevant on different levels of the organizations. CSC faces a hybrid governing logic, due to which cases are governed by direct authority as well as market and network governing logics, or a combination of these.

A public administration perspective towards CSC illustrates the unusual setting which CSC faces when conducting business. Public value theory illustrates three areas present in value creation within the public context: the authorizing environment commencing and legitimating service delivery, the operational capacity enabling value creation and the public value outcomes which are the result of the process. In CSC's case, legitimizing service delivery is the in-house position and special assignment of the company. Yet, it also restricts in many regards: for example, the Act on public procurement and concession contracts limit which customers CSC can serve (Act 1397/2016), making it difficult for CSC to achieve economies of scale. To some extent bureaucratic mechanisms characterize the way services are commissioned by the customer.

In addition, the authorizing environment sometimes consists of networks, in which case finding consensus can sometimes be challenging. Sometimes the authorizing environment consists of a single customer, which is also a shareholder. Instances of CSC's service delivery vary greatly in complexity and in the parties and other structures determining and constituting the authorizing environment as well as the operational capacity. Also, CSC's position in the public value creation process varies; sometimes CSC serves organizational customers who have public value objectives and sometimes CSC builds services directly to individuals. In the primary case, CSC enhances its customers' value creation capabilities, instead of directly contributing to public value creation. This kind of private customer value creation is familiar to most B2B companies.

Public value perspective suggests that the authorizing environment is identified and a common value mission goal is articulated. Yet, the interviews illustrated that the public value objectives or the means chosen to pursue them might not always be clear or uniformly agreed upon by all parties involved. The reason behind this did not become clear. It could be that the objectives haven't been considered from the perspectives of all stakeholders and thus truly are sub-optimal from public value perspective, or that the chosen path is a carefully considered compromise which seeks a balance between the value objectives of all parties, including the private, customer perspective. Whereas the insufficiency of the first option is self-explanatory, the second option might entail negative effects such as information asymmetry which creates conflicts on different levels of the interaction.

It seems that the dilemma presented by Mitronen and Rintamäki (2012) and Moore (1995) remains: how should the evaluation of public value objectives be determined and are they of ultimate importance? As was elaborated by Moore (2013), defining the objectives is rarely straightforward within public administration. Some interviewees articulated that the

needs of customers which can exert authority over CSC as owners might sometimes conflict with either CSC's strategy or the ultimate end user.

Indeed, the analysis identified a dilemma regarding strategic focus: the views conflicted regarding whether CSC would always engage in service delivery due to the in-house status when a customer faced a need or whether CSC was likely to not engage in service delivery, maintaining a focus on its core competences. The needs of the customers differ greatly and the company's ultimate mission is to serve its customers, which would suggest the former. Given the unique nature of CSC and the owner-shareholder position of nearly all customers, they might expect CSC to help them with all of their needs. On the other hand, it was indicated that due to customer proximity and the unique nature of the relationship between CSC and the customer, CSC would be more likely to turn down a business opportunity than an average service provider.

Adopting a commercial perspective is also useful. Although CSC faces a complex setting with a greater number of counterparts than a regular company, still the interaction with the immediate customer is of great importance. Whereas identifying a common value mission goal might be difficult, a focus on the immediate customer and their value creating process is in theory more simple. Service research suggests that it is important that the provider develops a good understanding of the value creating process of the customer (Grönroos, 2008). From a business administration perspective, the customer holds the decision making power, yet as advocated by Vargo and Lusch (2004), value is only created when the beneficiary actually engages with the offering.

CSC's service delivery process as illustrated in the cases explored in the interviews shares many similarities with the process presented by Aarikka-Stenroos and Jaakkola (2012). Their framework depicts a process for value co-creation in knowledge-intensive service provisioning which aims at joint problem solving and increasing value-in-use. Similarities with knowledge-intensive service delivery and CSC's service delivery can be pointed out: CSC engages in diagnosing the need, designing and producing the solution and implementing the solution oftentimes in close collaboration with the customer. CSC seems to often adopt the role as value option advisor and value amplifier, without necessarily always this being acknowledged. Also several of the customer roles were discussed implicitly: co-diagnoser, co-designer and co-developer.

However, traditional issues relating to organizing resources towards pursuing customer value faced by regular companies, such as a range of internal issues are present also within CSC. Although customer value is perceived to be of great importance, there are

several factors that showcase that customer value is not fully understood or incorporated in a systemized manner into CSC's operations.

The processes for service delivery seem to not have been formalized or standardized. This might be an indication of the fact that CSC is not accustomed to operating like a regular company with distinct areas of operations. One reason for exploring the findings through the public administration lens, which provides a broader perspective was that the answers varied significantly.

The interviews illustrated that there are no formal practices for taking customer value into consideration, or for dealing with potential conflicts of interest, e.g. between customer and public value, leaving these issues to be dealt with by the individual employee or the middle-level manager. The roles of CSC and the commitment towards customer value seemed to be more dependent on the individual employees strive towards excellency than the result of organizational practices.

In addition, the nature of the value was often explored in financial terms; CSC's mandate to only sell services at prices covering the costs of production was often highlighted. It was also suggested that the end user experience is often overlooked. The risk in not considering the end user's value-in-use is that the benefits which are sought after are never realized, reducing the value-in-use – which is of utmost importance according to marketing and service theory – to nonexistent.

## 6 Conclusion

Value is at the core of CSC's strategy; the guiding principle of CSC's current strategy is enabling customer success which is to be pursued by co-creating value with customers. Given that CSC - due to its special assignment mandate - differs profoundly from most commercial service providers in that it is not governed by competitive markets but by a hybrid logic of authority, networks and competitive markets, the concept of value immediately catches one's attention. What is value in the context of CSC? Who defines what is of value? What kind of value? Through what kind of a process?

These questions inspired the research questions of this case study. The first research question sought to increase understanding of customer value within CSC by asking: "*How is customer value perceived in CSC?*". Customer value was perceived to be of great importance for CSC, yet public value seemed to be of even greater importance. As highlighted by the interviews, value to customers was occasionally contradictory in itself

and at times the potential of creating customer value was not seen to be a sufficient justification for the involvement of CSC. Value to the end user, i.e. value-in-use was elaborated on as the most important, but sometimes lacking-in-attention objective in applicable cases.

The second research question aimed at deepening this understanding on a concrete level and connecting the concept to the service provisioning and increase understanding of the factors that hinder and enable customer value creation: *"How does customer value present itself in CSC's service delivery?"* It was shown that the service provisioning process is influenced by several factors which are dependent on the operating environment of the cases, and thus answering the second research question exhaustively is difficult. There is no common, standardized way of incorporating value into the service delivery process. In addition, CSC faces organizational issues, such as insufficient communication, rapid growth as well as cultural issues which are highly commonplace in regular companies. Having to please various levels within customer organizations or a demanding customer, or taking into consideration the needs of several stakeholders, are also issues familiar in the competitive markets.

In addition to increasing the understanding of the complex nature of value, CSC should ensure that its operations are optimized for enabling value creation. Research on market-oriented companies might serve as a good starting point given that the similarities on an operational level seem to be somewhat significant.

## 6.1 Theoretical implications

As noted in the beginning, state-owned companies are usually researched from the perspective of whether they are able to match commercial companies in performance. The present study adds to the literature on state-owned companies by taking an unusual perspective, by exploring public and private perspectives of value simultaneously and by seeking to find commonalities between the two.

In addition, the present study adds on the literature on hybrid companies and public administration by showcasing the application of the public value theory (Moore, 1995). The public value theory was used as an analytical framework in order to demonstrate the complexity of the operating environment of a hybrid organization and a state-owned company.



## 6.2 Managerial implications

This study should assist the management of the case company to form a better understanding of customer value, so that it can be incorporated to the operations of the business in a more structured manner. Many concrete issues relating to the operations of the company were highlighted by the interview findings. The management of the company should strive to address the issues to ensure an enhanced service delivery process which better enables value creation for the customer, the end user and for the public. Increasing the understanding of the roles of all parties and establishing a shared understanding of them should enable for enhanced value creation. Tools and techniques which support succeeding in the various roles should be made available. For example, the company should strive to improve the employees' prerequisites for dealing with customers who face disappointments in their pursuit on private customer value. CSC should increase capabilities for dealing with conflicting customer and public value and address the issues behind the conflicts; for example, information asymmetry could be a cause behind these issues.

The company should look into the frameworks presented in this study and apply them to its processes. The possibilities of the strategic triangle (Moore, 1995) could be further explored in order to better understand the dynamics of the service delivery process and between different parties that take part in public value creation. Applying it in practice should shed light on and bring forth the complex environment in which CSC engages in service delivery. On the other hand, this might help CSC in identifying seemingly absent similarities between cases and establish models which depict if not all, even most cases at a greater level of abstraction.

Also the hierarchical view towards customer value laid out by Almquist, et al. (2018) could assist the company in developing a better understanding of what its customers might perceive to be important. It would also provide a common language for exploring what the benefits and the outcomes resulting from service delivery could be and what kind of tradeoffs are connected to them.

## 6.3 Limitations to the study

This case study was initially designed from the point of view of private customer value. The public administration perspective was extensively incorporated only after the interviews had been conducted. Adopting a purely public administration perspective from the beginning might have portrayed CSC differently. In addition, the empirical data generated by the

interviews was not originally planned to be analyzed by Moore's strategic triangle (1995). Applications of the public value theory were not thoroughly analyzed beforehand. The results need to be interpreted within this context.

## **6.4 Further areas of research**

The limitations for customer and public value creation should be researched extensively and by focusing on more on the differentiating factors of state-ownership. The role of state-owned companies is a controversial and ongoing debate in Finland and a matter which is not necessarily fully understood. For example, the relationships and the dynamics between and within the different areas of public value creation - e.g. how the public value outcomes influence the authorizing environment and vice versa - would be an interesting area to explore.

In addition, an attempt could be made to more formally combine the public and the business administration perspectives.

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## Appendix A: Interview questions

	Question
1	How long have you worked at CSC? What is your current position? How long have you held your current position?
2	What is your and your group's role in providing customer solutions?
3	How would you describe CSC's customers and business goals?
4	How would you describe: <ol style="list-style-type: none"> <li>1. the value produced by the company, examined from different perspectives (customer, business, shareholder, society)?</li> <li>2. the impact the stakeholders have on determining the value which is sought after?</li> </ol>
5	Are there any conflicts relating to the previous?
6	Describe, as concretely as possible, a typical customer solution and the process how it is formed and the roles of different parties at different stages of the process.
7	What kind of value was sought after and how was value present in different stages of the process?
8	Were there attempts of actively assessing, measuring or verifying value at some point? If so, what was done?
9	Which factors in the relationship, in the customer organization or in the circumstances enabled or hindered the creation of customer value?
10	Which factors related to CSC enabled or hindered the creation of customer value?
11	How do you think the connection to the state affects CSC's value creation in contrast to a commercial company?
12	Do you think there is room for improvement regarding the value creation in the CSC's operations? If so, what and how could be done?
13	Would you say that CSC is a customer oriented business? Why?
14	Do you think customer value and customer orientation are important topics?
15	Anything else that comes to your mind regarding the topic?